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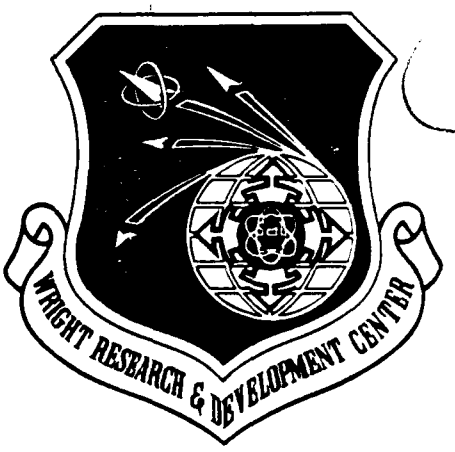


# INTEGRATED INFORMATION SUPPORT SYSTEM (IISS)
## Volume V - Common Data Model Subsystem
## Part 10 - Neutral Data Manipulation Language (NDML) Precompiler Control Module Product Specification

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25 July 91
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This specification establishes the design of a number of software modules necessary for the precompiler that were not addressed in any of the NDML Precompiler Development Specification.

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## FOREWORD

This technical report covers work performed under Air Force Contract F33600-87-C-0464, DAPro Project. This contract is sponsored by the Manufacturing Technology Directorate, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Bruce A. Rasmussen, Branch Chief, Integration Technology Division, Manufacturing Technology Directorate, through Mr. David L. Judson, Project Manager. The Prime Contractor was Integration Technology Services, Software Programs Division, of the Control Data Corporation, Dayton, Ohio, under the direction of Mr. W. A. Osborne. The DAPro Project Manager for Control Data Corporation was Mr. Jimmy P. Maxwell.

The DAPro project was created to continue the development, test, and demonstration of the Integrated Information Support System (IISS). The IISS technology work comprises enhancements to IISS software and the establishment and operation of IISS test bed hardware and communications for developers and users.

The following list names the Control Data Corporation subcontractors and their contributing activities:

| SUBCONTRACTOR | ROLE |
|---|---|
| Control Data Corporation | Responsible for the overall Common Data Model design development and implementation, IISS integration and test, and technology transfer of IISS. |
| D. Appleton Company | Responsible for providing software information services for the Common Data Model and IDEF1X integration methodology. |
| ONTEK | Responsible for defining and testing a representative integrated system base in Artificial Intelligence techniques to establish fitness for use. |
| Simpact Corporation | Responsible for Communication development. |
| Structural Dynamics Research Corporation | Responsible for User Interfaces, Virtual Terminal Interface,and Network Transaction Manager design, development, implementation, and support. |
| Arizona State University | Responsible for test bed operations and support. |

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# SECTION 1

# SCOPE

## 1.1 Identification

This specification establishes the design of a number of software modules necessary for the precompiler that were not addressed in any of the NDML Precompiler Development Specification. They can be referred to as PRE0, "NDML Control Modules", to be built and formally accepted by the ICAM Program Office. This CI constitutes one of the subsystems of the Common Data Model Processor (CDMP).

## 1.2 Functional Summary

This configuration item consists of the following software modules:

1. CDM01, APNAME
2. MAIN, CDPRE
3. CDECHK
4. RPTERR
5. CDP13

The purpose of Computer Program Configuration Item (CPCI) and a brief description of the major functions follows:

1. CDM01 is designated to be a process that accesses an ORACLE database. It is accessed by a call to the module APNAME. It determines the next available name to use for a software module that is to be generated.

2. MAIN and CDPRE are designed to be the user interface entry point and top level NDML precompiler control module respectively. At this time, the user interface is the NDML precompiler and is designed to be a simple batch-oriented COBOL program. The inputs to the precompiler are "ACCEPTED" from a single file and the outputs (the identification of generated code) are "DISPLAY" output. This user interface main, after having assembled the input, then calls CDPRE. CDPRE is the callable entry point to the precompiler itself. The precompiler has been made a callable routine to support many other user interfaces as yet unbuilt. CDPRE is essentially a control routine of other designed CPCI's of the NDML precompiler. It executes a loop while over the user input file. This allows for many user modules of a single logical unit of work to be precompiled at the same time (a requirement of the

current design). After each user module is precompiled, CDECHK is called to perform any error handling chores. At the end of the user's batch, CDP14 (PRE14) is accessed to generate the necessary request processor main routines.

3. CDECHK is a module that localizes all error checking and handling for the precompilation of a single user module. If the precompile was successful, a record of all generated code is stored on the CDM ORACLE database. If unsuccessful, all module names assigned and generated during the precompilation process must be marked as re-useable.

4. A generalized routine, RPTERR, is used to report user errors during precompilation. This writes the specific message into an error file that contains all user input code along with the interspersed error messages in much the same way as a standard COBOL compiler.

5. CDP13 is a module designed to control all code generation activities of the precompiler. It is called by PRE5. Input to CDP13 consists of the logical specifications for each subtransaction to be generated. For each subtransaction, APNAME is called to get a new name for the module to be generated for a query, PRE8 is called to generate the CS to ES transformer. PRE10 is called to generate code into the user's AP. Also, one of the DBMS specific code generator's is called based upon the type of DBMS the subtransaction must access.

# SECTION 2

# DOCUMENTS

## 2.1 Reference Documents

1. ICAM Documentation Standards: IDS15012000A, 28 December 1981.

2. D. Appleton Co., CDM Administrators Manual: UM620141000, March 1984.

3. D. Appleton Co., CDM1-IDEF1 Model of the Common Data Model; CCS620141000, 15 May 1985.

4. D. Appleton Co., Computer Program Development Specification (DS) for ICAM Integrated Support System (IISS) Configuration Item: NDML Precompiler; DS620141200, October 1984.

5. D. Appleton Co., Embedded NDML Programmer's Reference Manual; PRM620141200, March 1985.

6. Softech, Inc., NTM Programmer's Guide: UM620140001, July 1984.

7. Control Data Corp., Computer Program Development Specification (DS) for ICAM Integrated Support System (IISS) Configuration Item: NDDL Command Processor; DS620141100, June 1985.

## 2.2 Terms and Abbreviations

Attribute Use Class: (AUC)

Conceptual Schema: (CS)

Common Data Model Processor: (CDMP)

Common Data Model: (CDM) Describes common data application process formats, form definitions, etc, of the IISS and includes conceptual schema, external, internal schemas, and schema transformation operators.

Data Field: (DF) An element of data in the external schema. It is by this name that an NDML programmer references data.

Database Management System: (DBMS)

Distributed Request Supervisor: (DRS) This IISS CDM subsystem configuration item controls the execution of distributed NDML queries and non distributed updates.

Domain: A logical definition of legal attribute class values.

Domain Constraint: Predicate that applies to a single domain.

External Schema: (ES)

Forms: Structured views which may be imposed on windows or other forms. A form is composed of fields where each field is a form, item, or window.

Forms Processor: (FP) A set of callable execution time routines available to an application program for form processing.

Internal Schema: (IS)

Integrated Information Support System: (IISS) A test computing environment used to investigate, demonstrate and test the concepts of information management and information integration in the context of Aerospace Manufacturing. The IISS addresses the problems of integration of data resident on heterogeneous databases supported by heterogeneous computers interconnected via a local Area Network.

Mapping: The correspondence of independent objects in two schemas: ES to CS or CS to IS.

Network Transaction Manager: (NTM) Performs the coordination, communication and housekeeping functions required to integrate the application processes and system services resident on the various hosts into a cohesive system.

Neutral Data Manipulation Language: (NDML) A language developed by the IISS project to provide uniform access to common data, regardless of database manager or distribution criteria. It provides distributed retrieved and single node updates.

ORACLE: Relational DBMS based on the SQL (Structured Query Language, a product of ORACLE Corp, Menlo Park, CA). The CDM is an ORACLE database.

Parcel: A sequential file containing sections source code of the input application program.

Request Processor: (RP) A COBOL program that will satisfy a retrieval or update NDML subtransaction against a particular Database Management System.

User Interface: (UI) Controls the user's terminal and interfaces with the rest of the system.

Virtual Terminal Interface: (VTI) Performs the interfacing between different terminals and the UI. This is done by defining a specific set of terminal features and protocols which must be supported by UI software which constitutes the Virtual Terminal Definition. Specific terminals are then mapped against the Virtual Terminal software by specific software modules written for each type of real terminal supported.

# SECTION 3

# REQUIREMENTS

## 3.1 Structural Description

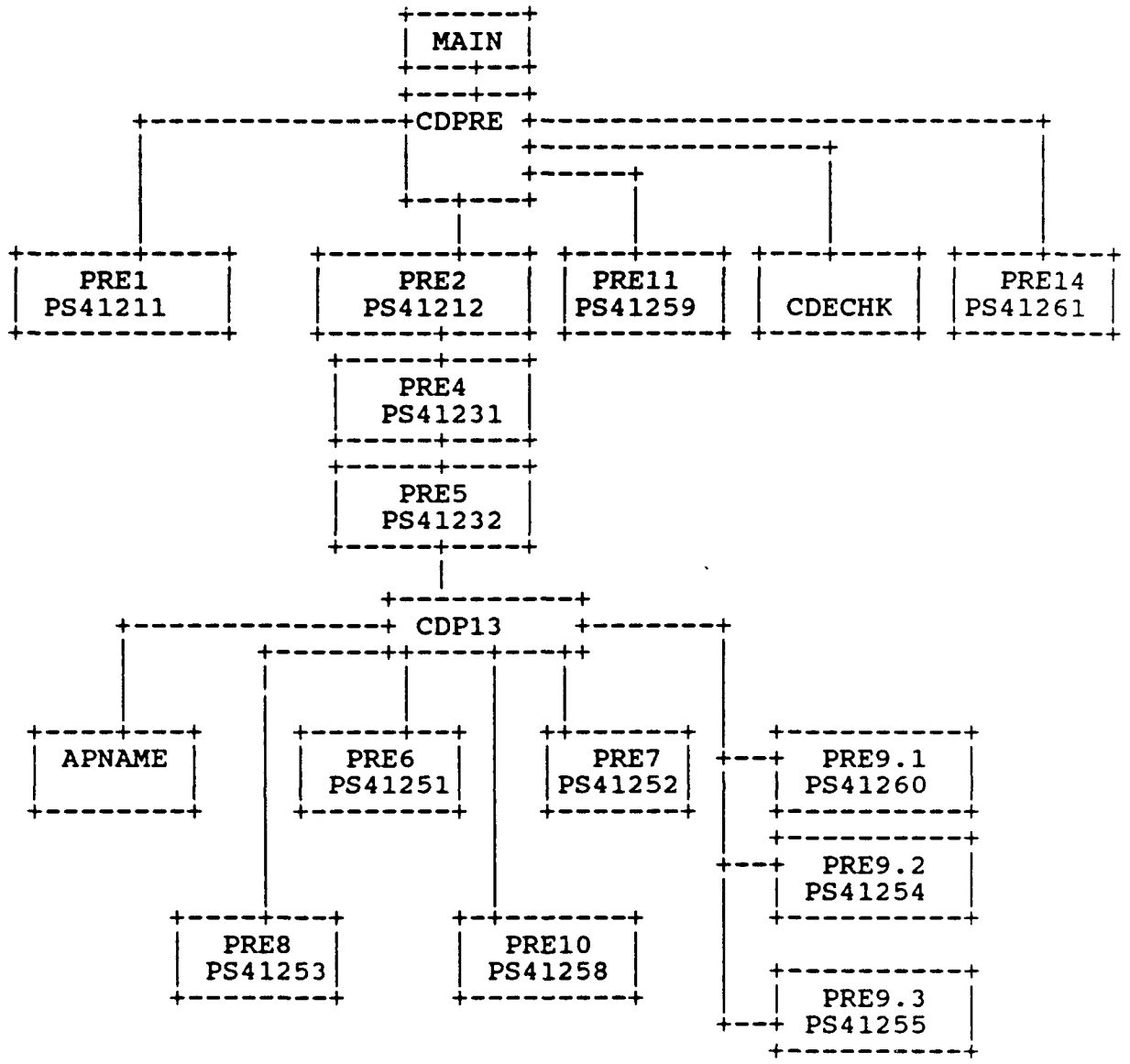
A graphic portrayal of this CPCI is included in Section 3.10. This chart shows the hierarchical relationship of each module making up this CPCI. Since only those modules of this CPCI are shown in Section 3.10, the user is referred to the diagrams of Section 3.3 to show how these modules control the CPCI's of the NDML precompiler.

## 3.2 Functional Flow

A single execution of the NDML precompiler may have many logical units of work, each consisting of a batch of user modules. MAIN controls this loop. Each batch consists of many user modules which may be precompiled successfully or unsuccessfully. This loop is controlled by CDPRE. Error handling logic, for each user module, is controlled by CDECHK. Many NDML statements may be found in each user module. This logic is controlled by PRE2. Each NDML statement may require many conceptual transactions (the original request plus any integrity tests) which is controlled by PRE4. Each conceptual transaction may require many internal schema subtransactions. This is determined by PRE5. The generation of code for each subtransaction is controlled by CDP13.

## 3.3 Interfaces

The following diagram depicts the interface of PRE0 with other CPCI's in the system.




### 3.3.1 Input/Outputs

The following tables depict the inputs and outputs of each module in this CPCI. A detailed description for each item can be found in the DS for this CPCI.

MODULE: CDM01

| INPUT | OUTPUT |
|---|---|
| --NONE-- | |

MODULE: APNAME

| INPUT | OUTPUT |
|---|---|
| DBMS Name | Application Process Name<br>Module Status |

MODULE: CDPRE

| INPUT | OUTPUT |
|---|---|
| Application Process Input File<br>Error File<br><br>Application Process Target Host<br><br>Users Application Process Name | Code Generator Table<br>Number of Good Precompiles<br>Number of Bad Precompiles<br>Module Status |

MODULE: CDECHK

| INPUT | OUTPUT |
|---|---|
| Precompile Status<br>Last Module Used<br>Users Module Name<br>Current Host<br>Target Host<br>Parcel 1<br>Parcel 2<br>Parcel 3<br>Parcel 4<br>Source Language<br>Code Generator<br>Oracle Logon Data Area | Module Status |

## 3.4 Program Interrupts

Not applicable to this CPCI.

## 3.5 Timing and Sequencing Description

Not applicable to this CPCI.

## 3.6 Special Control Features

Not applicable to this CPCI.

## 3.7 Storage Allocation

### 3.7.1 Database Definition

The database used by this CPCI is the Common Data Model (CDM) database. This model is defined by the CDM1, the IDEF1 model of the CDM, Reference Number 3.

#### 3.7.1.1 File Description

No permanent files have been defined for this CPCI. It may use temporary scratch files for such things as generated program source code or temporary query results.

#### 3.7.1.2 Table Description

Not applicable to this CPCI.

#### 3.7.1.3 Item Description

Not applicable to this CPCI.

### 3.8 Object Code Creation

The object code for this CPCI will be created by the system integration test team by using defined IISS Software Configuration Management Procedures. This CPCI will use the COBOL language compiler.

### 3.9 Adaptation Data

This CPCI has been coded using ANSI COBOL. The intent was to provide a transportable system. Any system environment supporting this language, a virtual memory management scheme, the COMM and NTM subsystem of IISS and the ORACLE Database Management System should be able to support this CPCI. Every possible attempt has been made to localize and identify any machine or environment dependent modules through the original design of the IISS and application of Configuration Management Procedures.

## 3.10 Detail Design Description

The following sections have been computer generated for this CPCI.

### 3.10.1 Where Include File Used List

The following lists each include file in the documentation group and all the modules documented in this specification which include them. The purpose of each module is listed as well.

DOCGROUP PS41200 Where-include-file-used List

| Include File | Module Name |
|---|---|
| ERRCDM | |
| | APNAME |
| | BLDCC |
| | CDCJOB |
| | CDDGAP |
| | CDECHK |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDFORP |
| | CDGDF |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDP13 |
| | CDPRE |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRSFN |
| | CDRTSND |
| | CDSLFN |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |

DOCGROUP PS41200 Where-include-file-used List

| Include File | Module Name |
|---|---|
| | GENRPD |
| | LOGANA |
| | MAIN |
| | RCMOD |
| ERRPRO | |
| | APNAME |
| | BLDCC |
| | CDCJOB |
| | CDDGAP |
| | CDECHK |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDFORP |
| | CDGDF |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDP13 |
| | CDPRE |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRSFN |
| | CDRTSND |

DOCGROUP PS41200 Where-include-file-used List

| Include File | Module Name |
|---|---|
| | CDSLFN |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| | GENRPD |
| | LOGANA |
| | MAIN |
| | RCMOD |
| | RPTERR |
| CHKCDM | |
| | BLDCC |
| | CDDGAP |
| | CDECHK |
| | CDFORP |
| | CDGDF |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDLKLUW |
| | CDP13 |
| | CDPRE |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| | LOGANA |

DOCGROUP PS41200 Where-include-file-used List

| Include File | Module Name |
|---|---|
| | RCMOD |
| CCTABLE | |
| | BLDCC |
| SBSTLST | |
| | CICJOB |
| ERRFS | |
| | CDCJOB |
| | CDECHK |
| | CDFORP |
| | CDGDF |
| | CDP13 |
| | CDPRE |
| | GENRPD |
| | MAIN |
| | RPTERR |
| CGTABLE | |
| | CDCJOB |
| | CDECHK |
| | CDF1RP |
| | CDFORP |
| | CDP13 |
| | CDPRE |
| | GENRPD |
| | MAIN |
| FLDELST | |
| | CDCJOB |
| | CDECHK |
| | CDPRE |
| | CDRPXRF |
| | CDVERSM |
| | MAIN |

DOCGROUP PS41200 Where-include-file-used List

| Include File | Module Name |
|---|---|
| EOD | |
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIRSU |
| | CDLKLUW |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDNM |
| | CDVERSM |
| ALFABET | |
| | CDF01 |
| ISAL | |
| | CDGDF |
| | CDP13 |
| ISQUAL | |
| | CDGDF |
| | CDP13 |
| CMAT | |
| | CDGDF |
| | CDP13 |
| FORVAR | |
| | CDGDF |
| | CDP13 |
| P5DFS | |

DOCGROUP PS41200 Where-include-file-used List

| Include File | Module Name |
|---|---|
| | CDIDFU |
| APAT | CDP13 |
| APINFO | CDP13 |
| APRK | CDP13 |
| APGC | CDP13 |
| SUBPROC | CDP13 |
| BOOLST | CDP13 |
| CSQUAL | CDP13 |
| JQGTBL | CDP13 |
| APL | CDP13 |
| SETTAB | CDP13 |
| RFTABLE | CDP13 |
| ESAL | CDP13 |
| ESQUAL | CDP13 |
| UVABBR | CDP13 |
| CSAL | CDP13 |

DOCGROUP PS41200 Where-include-file-used List

| Include File | Module Name |
|---|---|
| OCCTAB | |
| | CDP13 |
| SUBBOOL | |
| | CDP13 |
| BLSTACK | |
| | CDP13 |
| CURTAB | |
| | CDP13 |
| WHENTAB | |
| | CDP13 |
| SQLVAR | |
| | CDPRE |
| FILSTAT | |
| | GENRPD |
| | MAIN |
| | RPTERR |
| SRVRET | |
| | GENRPD |
| | RCMOD |

### 3.10.2 Where External Routine Used List

The following lists each external function or routine in the documentation group and all the documented modules which call it. The purpose of each module is listed as well.

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| CDM01 | |
| | APNAME |
| ERRPRO | |
| | APNAME |
| | BLDCC |
| | CDCJOB |
| | CDDGAP |
| | CDECHK |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDFORP |
| | CDGDF |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDP13 |
| | CDPRE |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRSFN |
| | CDRTSND |
| | CDSLFN |
| | CDUPDLW |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| | CDUPDNM |
| | CDVERSM |
| | GENRPD |
| | LOGANA |
| | MAIN |
| | RCMOD |
| | RPTERR |
| GENFIL | |
| | CDCJOB |
| | CDFORP |
| OPNFIL | |
| | CDCJOB |
| | CDECHK |
| | CDPRE |
| | GENRPD |
| | MAIN |
| CLSFIL | |
| | CDCJOB |
| | CDECHK |
| | CDPRE |
| | GENRPD |
| | MAIN |
| CDMACR | |
| | CDCJOB |
| OUTFIL | |
| | CDCJOB |
| | CDECHK |
| | CDGDF |
| | CDPRE |
| | RPTERR |
| SQLSCA | |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDPRE |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| SQLBS1 | |
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| SQLSCH | |
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| | CDVERSM |
| SQLSCC | |
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| SQLTFL | |
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| SQLOPN | |
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| SQLOSQ | |
| | CDDGAP |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| SQLADR | |
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| | CDLKLUW |
| | CDPRE |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| SQLAB1 | |
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| SQLEXE | |
| | CDDGAP |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIGAP |
| | CDINSLW |
| | CDINSNM |
| | CDINSSM |
| | CDIRSU |
| | CDLKLUW |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDRPXRF |
| | CDRTSND |
| | CDUPDLW |
| | CDUPDNM |
| | CDVERSM |
| SQLWNR | |
| | CDDGAP |
| | CDF01 |
| | CDIDFU |
| | CDRPDFU |
| | CDRPESU |
| | CDRPRSU |
| | CDUPDLW |
| | CDUPDNM |
| SQLTOC | |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| | CDF01 |
| | CDIDFU |
| | CDLKLUW |
| | CDRPXRF |
| SQLAD1 | |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIRSU |
| | CDLKLUW |
| | CDRPXRF |
| | CDRTSND |
| | CDVERSM |
| SQLFCH | |
| | CDF01 |
| | CDF1RP |
| | CDFLRP |
| | CDIDFU |
| | CDIDIU |
| | CDIRSU |
| | CDLKLUW |
| | CDRPXRF |
| | CDRTSND |
| | CDVERSM |
| SQLCLS | |
| | CDF01 |
| | CDIDFU |
| | CDLKLUW |
| | CDRPXRF |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| CDPIC | CDGDF |
| CDCREFO | CDGDF |
| CDGETOF | CDGDF |
| CDSDATE | CDIGAP<br>CDINSNM<br>CDINSSM<br>CDUPDNM |
| CDPRE8 | CDP13 |
| CDPRE8C | CDP13 |
| CDPRE8D | CDP13 |
| CDP10 | CDP13 |
| CDQPS | CDP13 |
| CDQPC | CDP13 |
| CDPRE6 | CDP13 |
| CDPRE7 | CDP13 |
| SQLLO1 | CDPRE |
| CDDBMSS | CDPRE |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| | CDVERSM |
| CDVERLW | |
| | CDPRE |
| CDPRE1 | |
| | CDPRE |
| CDPRE2 | |
| | CDPRE |
| CDP11 | |
| | CDPRE |
| CDSLMN | |
| | CDPRE |
| CDRSMN | |
| | CDPRE |
| INPFIL | |
| | CDPRE |
| | GENRPD |
| | MAIN |
| UNPLINE | |
| | CDPRE |
| CURLCNT | |
| | CDPRE |
| PROEXEC | |
| | CDPRE |
| CDRPSM | |
| | CDRPXRF |
| CDP14 | |
| | GENRPD |
| LOWUPP | |
| | MAIN |
| CDFUNC | |
| | RCMOD |

DOCGROUP PS41200 Where-external-routine-used List

| System Module | Module Name |
|---|---|
| NSEND | |
| | RCMOD |
| RCV | |
| | RCMOD |

### 3.10.3 Main Program Parts List

The following lists each Main Program in the documentation group and all the modules which are called either by that module itself or by any of the documented modules which it calls. It is possible for a non-main module to be listed more that once if it is called by multiple modules. The called modules, in this case known as program parts, are marked as to whether they are documented here. If so, the phrase "well-defined module" appears by the module name, if not it is an "external "routine". The Purpose of the Main Program module is listed as well.

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| APNAME | | |
| | CDM01 | External routine |
| | ERRPRO | External routine |
| BLDCC | | |
| | ERRPRO | External routine |
| CDCJOB | | |
| | ERRPRO | External routine |
| | GENFIL | External routine |
| | OPNFIL | External routine |
| | CLSFIL | External routine |
| | CDMACR | External routine |
| | OUTFIL | External routine |
| CDDGAP | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLWNR | External routine |
| CDECHK | | |
| | ERRPRO | External routine |
| | OPNFIL | External routine |
| | CLSFIL | External routine |
| | OUTFIL | External routine |
| | CDUPDNM | Well-defined module |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | CDIGAP | Well-defined module |
| | CDINSSM | Well-defined module |
| | CDUPDLW | Well-defined module |
| CDF01 | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLWNR | External routine |
| | SQLTOC | External routine |
| | SQLAD1 | External routine |
| | SQLFCH | External routine |
| | SQLCLS | External routine |
| CDF1RP | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | SQLEXE | External routine |
| | SQLAD1 | External routine |
| | SQLFCH | External routine |
| CDFLRP | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLAD1 | External routine |
| | SQLFCH | External routine |
| CDFORP | | |
| | ERRPRO | External routine |
| | GENFIL | External routine |
| | CDF1RP | External routine |
| | APNAME | External routine |
| | CDFLRP | External routine |
| CDGDF | | |
| | ERRPRO | External routine |
| | OUTFIL | External routine |
| | CDPIC | External routine |
| | CDCREFO | External routine |
| | CDGETOF | External routine |
| CDIDFU | | |
| | ERRPRO | External routine |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLWNR | External routine |
| | SQLTOC | External routine |
| | SQLAD1 | External routine |
| | SQLFCH | External routine |
| | SQLCLS | External routine |
| CDIDIU | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLAD1 | External routine |
| | SQLFCH | External routine |
| CDIGAP | | |
| | ERRPRO | External routine |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | CDSDATE | External routine |
| CDINSLW | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| CDINSNM | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | CDSDATE | External routine |
| CDINSSM | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | CDSDATE | External routine |
| CDIRSU | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLAD1 | External routine |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | SQLFCH | External routine |
| CDLKLUW | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLTOC | External routine |
| | SQLAD1 | External routine |
| | SQLFCH | External routine |
| | SQLCLS | External routine |
| CDP13 | | |
| | ERRPRO | External routine |
| | APNAME | External routine |
| | CDPRE8 | External routine |
| | CDPRE8C | External routine |
| | CDPRE8D | External routine |
| | CDP10 | External routine |
| | CDFORP | External routine |
| | CDQPS | External routine |
| | CDQPC | External routine |
| | CDPRE6 | External routine |
| | CDPRE7 | External routine |
| CDPRE | | |
| | ERRPRO | External routine |
| | OPNFIL | External routine |
| | CLSFIL | External routine |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | OUTFIL | External routine |
| | SQLSCA | External routine |
| | SQLADR | External routine |
| | CDUPDNM | Well-defined module |
| | SQLLO1 | External routine |
| | CDDBMSS | External routine |
| | CDVERLW | External routine |
| | CDPRE1 | External routine |
| | CDVERSM | Well-defined module |
| | CDPRE2 | External routine |
| | CDP11 | External routine |
| | CDSLFN | Well-defined module |
| | CDSLMN | External routine |
| | CDRSFN | Well-defined module |
| | CDRSMN | External routine |
| | CDCJOB | External routine |
| | RPTERR | Well-defined module |
| | CDECHK | External routine |
| | INPFIL | External routine |
| | UNPLINE | External routine |
| | CURLCNT | External routine |
| | PROEXEC | External routine |
| CDRPDFU | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLWNR | External routine |
| CDRPESU | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLWNR | External routine |
| CDRPRSU | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLWNR | External routine |
| CDRPXRF | | |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLTOC | External routine |
| | SQLAD1 | External routine |
| | SQLFCH | External routine |
| | SQLCLS | External routine |
| | CDRPRSU | External routine |
| | CDRPDFU | External routine |
| | CDRPSM | External routine |
| CDRSFN | | |
| | ERRPRO | External routine |
| | CDF01 | External routine |
| CDRTSND | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | SQLAD1 | External routine |
| | SQLFCH | External routine |
| CDSLFN | | |
| | ERRPRO | External routine |
| | CDF01 | External routine |
| CDUPDLW | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLWNR | External routine |
| CDUPDNM | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | SQLWNR | External routine |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | CDSDATE | External routine |
| CDVERSM | | |
| | ERRPRO | External routine |
| | SQLSCA | External routine |
| | SQLBS1 | External routine |
| | SQLSCH | External routine |
| | SQLSCC | External routine |
| | SQLTFL | External routine |
| | SQLOPN | External routine |
| | SQLOSQ | External routine |
| | SQLADR | External routine |
| | SQLAB1 | External routine |
| | SQLEXE | External routine |
| | CDINSSM | External routine |
| | SQLAD1 | External routine |
| | SQLFCH | External routine |
| | CDDBMSS | External routine |
| | CDLKLUW | External routine |
| | CDRPXRF | External routine |
| | CDRPESU | External routine |
| | CDDGAP | External routine |
| | CDINSNM | External routine |
| GENRPD | | |
| | ERRPRO | External routine |
| | OPNFIL | External routine |
| | CLSFIL | External routine |
| | INPFIL | External routine |
| | CDP14 | External routine |
| LOGANA | | |
| | ERRPRO | External routine |
| MAIN | | |

DOCGROUP PS41200 Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | ERRPRO | External routine |
| | OPNFIL | External routine |
| | CLSFIL | External routine |
| | INPFIL | External routine |
| | LOWUPP | External routine |
| | CDPRE | External routine |
| RCMOD | | |
| | ERRPRO | External routine |
| | CDFUNC | External routine |
| | NSEND | External routine |
| | RCV | External routine |
| RPTERR | | |
| | ERRPRO | External routine |
| | OUTFIL | External routine |

### 3.10.4 Module Documentation

The following documentation describes information which is specific to each individual module in the documentation group being documented in this specification. It provides a compact way of getting information that would be otherwise buried within each module's source code.

The specific items in this module documentation have the following meanings:

NAME: Name of program Module.

PURPOSE: Purpose of Module as detailed in the source code.

LANGUAGE: Programming language source code is written in.
The choices are:
VAX-11 FORTRAN
C (I/S-1 Workbench 'C')
VAX-11 COBOL

MODULE TYPE: Whether a Program, Subroutine, or Function.

SOURCE FILE: Name of Source File from file specification.

SOURCE FILE TYPE: Source File Extension from file specification.

| | |
|---|---|
| HOST: | Whether this is a host dependent routine (VAX or IBM) or blank if host-independent. |
| SUBSYSTEM: | IISS sub-system this file resides in. |
| SUBDIRECTORY: | Sub-directory of that subsystem in which this file resides. |
| DOCUMENTATION GROUP: | Name of documentation group of which this source file is a member. |
| DESCRIPTION: | A description of the module as otained from the source code. |
| ARGUMENTS: | The arguments with which this routine is called if it is a Subroutine or a Function. |
| INCLUDE FILES: | A list of all the files that are included into this module as well as their purposes. |
| ROUTINES CALLED: | Subroutines or Functions, either documented or external, called by this module, if any. |
| CALLED DIRECTLY BY: | The documented routines which call this module, if any. |
| USED IN MAIN PROGRAM(S): | The documented Main Programs which contain this module in their parts list according to the list in section 3.10.3. |

The Module Documentation is arranged alphabetically according to Module Name.

DOCGROUP PS41200 Module Documentation

NAME: APNAME
PURPOSE: INTERFACES WITH THE MODULE NAME ASSIGNER
LANGUAGE: VAX-11 COBOL
SOURCE FILE: APNAME
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: SHARE

DESCRIPTION:
---

THE PURPOSE OF THIS ROUTINE IS TO ACT AS A
GENERALIZED INTERFACE TO THE MODULE NAME

QUEUE SERVER. IT WILL GET NEW NAMES.
MOD 2.0 STANDARDIZED ERROR HANDLING,
MODIFIED FOR RELEASE 2.2 - IGNORE UNSOLICITED MESSAGES
(AUGUST 1986)
MODIFIED FOR RELEASE 2.3 (2.2.5)-RECEIVE A BLOCK OF 20 NAMES
AND HAND OUT ONE AT A TIME.
MOD FOR 2.3-
CALL CDM01 DIRECTLY WHICH WILL USE DATA BASE AND HAND
OUT ONE NAME AT A TIME.

ARGUMENTS:
---

| | |
|---|---|
| DBMS-NAME | DSPLY[X(30)] |
| AP-NAME | DSPLY[X(10)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
ERRCDM
ERRPRO

ROUTINES CALLED:
---
CDM01
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: BLDCC
PURPOSE: BUILDS CONTROL CARD FOR RCL
LANGUAGE: VAX-11 COBOL
SOURCE FILE: BLDCC
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
- BUILDS THE CONTROL CARD FROM THE
CONTROL-CARD-TABLE, CODE GENERATOR
TABLE, AND FUNC PASSED FROM CDRCL.
THIS CARD WILL THEN BE TAKEN BY CDRCL
AND USED IN THE NTM ROUTINE 'SNDRCLE'
CALLED BY CDRCL.

ARGUMENTS:
---

| | |
|---|---|
| TARGET-HOST | DSPLY[XXX] |
| FILE-MOD-NAME | DSPLY[X(30)] |
| FUNC | DSPLY[X(30)] |
| CTL-CARD | DSPLY[X(72)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
CCTABLE
ERRPRO

ROUTINES CALLED:
---
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDCJOB
PURPOSE: CREATE A PROCEDURE TO COMPILE ALL GENERATED CODE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDCJOB
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
-
THIS ROUTINE WILL USE THE CODE-GENERATOR-TABLE
TO CREATE A PROCEDURE FILE THAT WILL COMPILE
ALL GENERATED CODE. IT WILL USE GENFIL TO GET A NAME
FOR THE PROC FILE AND NAMES FOR THE TEMPORARY FILES
THAT MAY BE NEEDED. THE PROCEDURE USED FOR EACH
FILE WILL DEPEND ON THE TYPE OF CODE IT IS
(USER MOD, RP-SUB, CS-ES ETC) AND A COMBINATION
OF THE PROGRAM'S LANGUAGE, HOST AND DBMS.

2/23/88 - UPDATED TO FIOPS FOR UNIX REHOST.
8/01/88 - UPDATED TO ACCEPT "HP" OR "PYR" AS MY-HOST AND
GENERATE
A MAKEFILE IF SO.
12/6/88 - UPDATE CODE FOR PYR TO REFLECT DIFFERENCES IN
PYRAMID AND
HP MAKEFILES.

2/01/89 - UPDATED CODE FOR PYR TO ALLOW MORE THAN 50 MODULES IN A
COMPILE GROUP.
12/13/89 - UPDATED TO NOT DO A LIB/DELETE IF OBJECTS WERE ON A REMOTE HOST. INSTEAD A NEW FILE WILL GET GENERATED WITH PROPER HOST COMMANDS TO DELETE THEM ON THE REMOTE HOST. THIS FILE WILL THEN GET SENT BY GENAP TO THE PROPER MACHINE TO RUN. (NOTE: LOGIC ONLY IN FOR REMOTE HOST BEING IBM)

ARGUMENTS:
---

| | |
|---|---|
| CODE-GENERATOR-TABLE | RECRD |
| MY-HOST | DSPLY[XXX] |
| FILE-DELETE-LIST | RECRD |
| COMP-PROC-FILE | DSPLY[X(80)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
ERRCDM
SBSTLST
ERRFS
CGTABLE
FLDELST
ERRPRO

ROUTINES CALLED:
---
GENFIL
OPNFIL
CLSFIL
ERRPRO
CDMACR
OUTFIL

DOCGROUP PS41200 Module Documentation

NAME: CDDGAP
PURPOSE: DROP ALL REFERENCES OF GENERATED MODULE (AP)
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDDGAP
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: SHARE

DESCRIPTION:
---
-
USE SQL TO DELETE ALL ROWS FROM THE GENERATED MODULE CDM TABLE FOR A USER MODULE BEING RE-PRECOMPILED.
REWRITTEN FOR RELEASE 2.3, NEW CDM TABLES AND USE SQL

ARGUMENTS:
---

| | |
|---|---|
| MOD-ID | DSPLY[X(10)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
EOD
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLWNR
RRRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDECHK
PURPOSE: PROVIDE PRECOMPILER ERROR CHECKING
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDECHK
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
THIS ROUTINE WILL TEST THE RET-STATUS AT END OF PRECOMPILING ONE USER MODULE. IF GOOD THEN INSERT ALL NEW REFERENCES IN THE CDM AND DELETE UNNEEDED FILES. DELETE OBSOLETE CODE AT THE USERS OPTION. IF BAD, THEN DELETE ANY SCRATCH FILES.

2/22/88 CONVERTED TO FIOPS FOR UNIX REHOST.

ARGUMENTS:
---

| | |
|---|---|
| PREC-STATUS | DSPLY[X(5)] |
| LAST-CGT-USED | DSPLY[S9(9)] |
| LAST-FDL-USED | DSPLY[S9(9)] |
| USER-MOD-ID | DSPLY[X(10)] |
| MY-HOST | DSPLY[XXX] |
| TARGET-HOST | DSPLY[XXX] |
| FCB1 | DSPLY[S9(9)] |
| FCB2 | DSPLY[S9(9)] |
| FCB3 | DSPLY[S9(9)] |
| FCB4 | DSPLY[S9(9)] |
| PARCL1 | DSPLY[X(80)] |
| AP-LANGUAGE | DSPLY[X(10)] |
| CODE-GENERATOR-TABLE | RECRD |
| FILE-DELETE-LIST | RECRD |
| FILE-DELETE-OPTION | DSPLY[X(4)] |
| LUW-NAME | DSPLY[X(30)] |
| LAST-CASE-NO | DSPLY[9(6)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
ERRCDM
CHKCDM
ERRFS
CGTABLE
FLDELST
ERRPRO

ROUTINES CALLED:
---
ERRPRO
CDUPDNM
CDIGAP
CDINSSM
CLSFIL
OPNFIL
CDUPDLW
OUTFIL

DOCGROUP PS41200 Module Documentation

NAME: CDF01
PURPOSE: THIS ROUTINE GENERATES UNIQUE FILE NAMES
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDF01
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: SHARE

DESCRIPTION:
---

- CDF01 IS A QUEUE SERVER RESIDENT ON ONLY ONE PLACE IN THE TEST BED. WHEN CALLED WITH A HOST ID, IT WILL REPLY WITH THE NEXT FILE NAME TO USE FOR TEMPORARY RESULTS OF QUERY PROCESSORS,AGGREGATORS, AND THE C TO E TRANSFORMS, ETC.

MOD FOR 2.0
SEND OUT MANY FILE NAMES ON 1 REQUEST
WRAP FILE NUMBERS AROUND AND INCREMENT LETTER
SAVE FILE NAMES USED PERIODICALLY ON A
SAVE-FILE
MOD FOR 2.2.5
ADD WORKAROUND FOR NTM SHUTDOWN PROBLEM:
SAVE FILE NAMES WHENEVER THERE IS NO
OUTSTANDING REQUEST. USE CHKMSG EVERY
TIME A REPLY IS SENT, IF NO MESSAGES ARE
ARE READY, THEN SAVE THE NAMES IN THE FILE.
MOD FOR 2.3
SCRAP USE OF Q-SERVER APPROACH. THIS IS NOW
A SUBROUTINE WHICH WILL USE A SQL TABLE TO GET
A FILE NAME FOR THE HOST DESIRED. BEFORE THE
COMMIT POINT, IT WILL UPDATE THE DATA BASE WITH
THE LAST USED FILE NAME, IF CALLED WITH THE
FETCH-SAVE-FLAG SET TO "S".

ARGUMENTS:
---

| | |
|---|---|
| FETCH-SAVE-FLAG | DSPLY[X] |
| FILE-HOST | DSPLY[XXX] |
| NEW-FILE-NAME | DSPLY[X(80)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---

ERRCDM
EOD
ALFABET
ERRPRO

ROUTINES CALLED:
---

ERRPRO
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTOC
SQLOSQ
SQLADR
SQLAB1

SQLEXE
SQLAD1
SQLFCH
SQLCLS
SQLTFL
SQLOPN
SQLWNR

DOCGROUP PS41200 Module Documentation

NAME: CDF1RP
PURPOSE: FIND NAME OF AN EXISTING REQUEST PROCESSOR
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDF1RP
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
-
GIVEN THE NAME OF A LOGICAL UNIT OF WORK BEING PRECOMPILED AND THE DATA BASE ID OF A SUBTRANSACTION, THIS ROUTINE WILL DO A DATA BASE SEARCH TO DETERMINE THE NAME OF THE REQUEST PROCESSOR. IF FOUND, THE NAME OF THE RP DRIVER WILL BE ADDED TO THE CODE GENERATOR TABLE.

SEARCH THE GENERATED_MOD TABLE FOR THE ENTRY FOR THE PARTICULAR RP DRIVER NEEDED (USE THE LUW NAME AND THE DB-ID). IF NOT FOUND RETURN THIS FACT. IF FOUND, RETURN THE LOCALITY AND THE MOD-ID OF THE RP DRIVER AND STORE AN ENTRY IN THE CODE-GENERATOR-TABLE TO PREVENT FURTHER DATA BASE SEARCHES OF THIS TYPE IN THIS PRECOMPILE SESSION.

ARGUMENTS:
---

| | |
|---|---|
| LUW-NAME | DSPLY[X(30)] |
| DB-ID | DSPLY[9(6)] |
| MOD-ID | DSPLY[X(10)] |
| LOCALITY | DSPLY[X] |
| FOUND-FLAG | DSPLY[9] |
| CODE-GENERATOR-TABLE | RECRD |
| SUB-LANG | DSPLY[X(10)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
ERRCDM
EOD
CGTABLE
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLAD1
SQLFCH
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDFLRP
PURPOSE: FIND THE NAME OF THE LOCAL REQUEST PROCESSOR
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDFLRP
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
-
GIVEN THE LOGICAL UNIT OF WORK, FIND THE NAME OF THE LOCAL REQUEST PROCESSOR (IF ANY) BY SEARCHING THE GENERATED MODULE TABLE.

ARGUMENTS:
---

| | |
|---|---|
| LUW-NAME | DSPLY[X(30)] |
| FOUND-FLAG | DSPLY[9] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
ERRCDM
EOD
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLAD1
SQLFCH
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDFORP
PURPOSE: FIGURE OUT THE NAME OF THE REQUEST PROCESSOR
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDFORP
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
-
DETERMINE THE NAME OF THE RP DRIVER FOR A PARTICULAR
SUBTRANSACTION AND WHETHER IT IS REMOTE OR LOCAL
GIVEN THE LOGICAL UNIT OF WORK NAME AND THE DATA BASE ID
BY SEARCHING THE CODE GENERATOR TABLE OR THE CDM.
STORE THE NAME OF THE RP DETERMINED IN THE CODE GENERATOR
TABLE IF IT WAS FOUND ON THE DATA BASE. IF NOT FOUND
ANYWHERE USE THE MODULE NAMER TO BUILD UP A NEW NAME.

FIRST CHECK THE CODE GENERATOR TABLE FOR AN ENTRY FOR THE
DBID OF THE SUBTRANSACTION, IF FOUND, RETURN THE NAME OF THE
RP AND ITS LOCALITY. IF IT IS NOT IN THE TABLE, CALL CDF1RP
WHICH WILL SEARCH THE CDM FOR THE NEEDED RP NAME AND IF FOUND
STORE A REFERENCE IN THE CODE GENERATOR TABLE. IF CDF1RP
FOUND IT, THIS ROUTINE WILL RETURN THE NAME AND LOCALITY
FROM THE DATA BASE SEARCH. IF CDF1RP DID NOT FIND THE

RP DRIVER, THEN WE MUST ACCESS THE MODULE NAMER WITH A CALL TO APNAME. THEN WE MUST LOOK TO SEE IF IT IS GOING TO BE A LOCAL OR REMOTE RP. WE CALL CDFLRP TO DETERMINE IF THERE ARE ANY OTHER LOCAL RP'S. IF THERE ARE, THIS ONE MUST BE REMOTE. IF NOT, IT COULD BE LOCAL ONLY IF THERE ARE NO LOCALS IN THE CODE GENERATOR TABLE AND IT IS TO RUN ON THE SAME HOST AS THE TARGET HOST OF THE USER'S AP. IF THE RP IS TO BE REMOTE WE MUST BUILD THE RP MAIN AP NAME BY CONCATENATING THE NTM-DIRECTORY THE MODULE NAME AND THE TRAILING ZZZ'S REQUIRED BY THE NTM.

ARGUMENTS:
---

| | |
|---|---|
| DBID | DSPLY[9(6)] |
| LUW-NAME | DSPLY[X(30)] |
| DBMS-NAME | DSPLY[X(30)] |
| NTM-DIRECTORY | DSPLY[XX] |
| RP-SUB-HOST | DSPLY[XXX] |
| DB-NAME | DSPLY[X(30)] |
| TARGET-HOST | DSPLY[XXX] |
| MY-HOST | DSPLY[XXX] |
| CODE-GENERATOR-TABLE | RECRD |
| SUB-LANG | DSPLY[X(10)] |
| RP-MAIN-NAME | RECRD |
| LOCALITY | DSPLY[X] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
ERRFS
CGTABLE
ERRPRO

ROUTINES CALLED:
---
CDF1RP
APNAME
CDFLRP
GENFIL
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDGDF
PURPOSE: GENERATES WS VARIABLE DEFINITIONS AND INDICATORS
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDGDF
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---

- THIS ROUTINE WILL GENERATE WORKING STORAGE
AND INDICATORS FOR RECEIVING FIELDS INTO
A SQL REQUEST SUBROUTINE -- 5/20/86.

MODIFIED 9/88 - RELEASE 2.5
GENERATE CODE IN COBOL, C, OR FORTRAN
Update 8/89 to allow for an extra character in a 'c' character string to hold a null terminator - needed for ingres5 and ingres6
-

ARGUMENTS:
---

| | |
|---|---|
| IS-ACTION-LIST | RECRD |
| IS-QUALIFY-LIST | RECRD |
| COMPLEX-MAPPING-ALG-TABLE | RECRD |
| SUBTRANS-ID | DSPLY[999] |
| FCB-W | DSPLY[S9(9)] |
| SOURCE-LANGUAGE | DSPLY[X(10)] |
| FORTRAN-VARIABLE-TABLE | RECRD |
| STRING-EXPANSION-FLAG | DSPLY[X] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---

CHKCDM
ERRCDM
ERRFS
ISAL
ISQUAL
CMAT
FORVAR
ERRPRO

ROUTINES CALLED:
---

CDPIC
CDCREFO
CDGETOF
OUTFIL
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDIDFU
PURPOSE: INSERT INTERNAL SCHEMA DATA FIELD USAGE CROSS REF
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDIDFU
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
-
GIVEN THE GENERATED MODULE NAME AND THE DATA FIELD
NUMBER USED AND ITS USAGE CODE (SELECT, INSERT, ETC...)
STORE A SINGLE
CROSS REFERENCE IN THE DATA_FIELD_USAGE TABLE.

MOVE ALL INPUTS TO WORKING STORAGE. DO THE INSERT AND
TEST FOR ERROR CODES.

ARGUMENTS:
---

| | |
|---|---|
| GEN-MOD-ID | DSPLY[X(10)] |
| DF-NO | DSPLY[9(6)] |
| DF-USAGE-CODE | DSPLY[X] |
| DF-TABLE-LIST | RECRD |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
ERRCDM
EOD
P5DFS
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLAD1
SQLFCH
SQLTOC
SQLWNR
SQLCLS
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDIDIU
PURPOSE: INSERT EXTERNAL SCHEMA USAGE CROSS REFERENCE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDIDIU
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---

GIVEN THE NAME OF THE USER MODULE BEING PRECOMPILED
AND EITHER THE NUMBER OF THE DATA ITEM OR THE
VIEW REFERENCED AND A CODE INDICATING HOW THE
VIEW OR DATA ITEM IS USED (SELECT, MODIFY, ETC.)
THIS ROUTINE WILL PERFORM A RELATIONAL INSERT FOR THE
ES_USAGE TABLE.

MOVE VARIABLES TO WORKING STORAGE, SET UP NULL
INDICATORS. BOTH DATA ITEM AND VIEW BEING NULL
IS AN ERROR. DO THE INSERT, CHECK FOR ANY ERROR.

ARGUMENTS:
---

| | |
|---|---|
| USER-MOD-ID | DSPLY[X(10)] |
| DI-NO | DSPLY[9(6)] |
| VIEW-NO | DSPLY[9(6)] |
| USAGE-CODE | DSPLY[X] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---

ERRCDM
EOD
ERRPRO

ROUTINES CALLED:
---

ERRPRO
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLAD1
SQLFCH

DOCGROUP PS41200 Module Documentation
NAME: CDIGAP
PURPOSE: INSERT A ROW INTO THE GENERATED MODULE CDM TABLE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDIGAP
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---

THIS ROUTINE WILL STORE A SINGLE ROW INTO THE
CDM TABLE GENERATED MODULE WHICH RECORDS ALL
TYPES OF MODULES GENERATED BY THE NDML
PRECOMPILER. IT USES AN SQL INSERT AND IT USES
THE DBMS FACILITY FOR TODAY'S DATE AND TIME.
ALL OTHER VALUES ARE PASSED AS INPUT.
EACH INPUT VALUE MUST BE TESTED AS SPACES OR
ZERO IN CASE A NULL VALUE MUST BE REPRESENTED.

ARGUMENTS:
---

| | |
|---|---|
| GENERATED-MOD-ID | DSPLY[X(10)] |
| USER-MOD-ID | DSPLY[X(10)] |
| GENERATED-BY | DSPLY[X(10)] |
| MODULE-TYPE | DSPLY[X(10)] |
| CASE-NO | DSPLY[9(6)] |
| IS-ACTION | DSPLY[X] |
| FILE-NAME | DSPLY[X(80)] |
| HOST-ID | DSPLY[X(3)] |
| DB-ID | DSPLY[9(6)] |
| LUW-NAME | DSPLY[X(30)] |
| LOCAL-REMOTE | DSPLY[X] |
| SUBTRANS-ID | DSPLY[9(6)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---

CHKCDM
ERRCDM
ERRPRO

ROUTINES CALLED:
---

CDSDATE
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDINSLW
PURPOSE: INSERT A ROW INTO THE LOGICAL UNIT OF WORK TABLE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDINSLW
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
WHEN THE USER PRECOMPILES THE FIRST TIME AGAINST A LOGICAL UNIT OF WORK, IT WILL NOT BE FOUND ON THE CDM DATA BASE. THIS ROUTINE WILL STORE THE NEW ROW FOR THE GIVEN LOGICAL UNIT OF WORK NAME. THE LAST CASE NUMBER USED INTERNALLY BY THE PRECOMPILER IS INITIALIZED TO ZERO. AFTER PRECOMPILATION, IT IS COURSE UPDATED TO THE LAST USED VALUE.

ARGUMENTS:
---

| | |
|---|---|
| LUW-NAME | DSPLY[X(30)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDINSNM
PURPOSE: INSERT A NEW ROW IN THE NDML MODULE TABLE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDINSNM
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
-
GIVEN THE NAME OF THE USER MODULE BEING PRECOMPILED
FOR THE FIRST TIME, ITS LOGICAL UNIT OF WORK
STORE A NEW ROW IN THE CDM TABLE NDML MODULE WITH
THE SYSTEM DATE AS THE DATE IT WAS FIRST PRECOMPILED.

ARGUMENTS:
---
| | |
|---|---|
| LUW-NAME | DSPLY[X(30)] |
| MOD-ID | DSPLY[X(10)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
ERRPRO

ROUTINES CALLED:
---
CDSDATE
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDINSSM
PURPOSE: INSERT A NEW ROW INTO THE SOFTWARE MODULE TABLE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDINSSM
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
GIVEN THE NAME OF THE SOFTWARE MODULE, IT SOURCE LANGUGE, THIS ROUTINE WILL INSERT A NEW ROW INTO THE SOFTWARE MODULE TABLE OF THE CDM. THIS IS USED TO RECORD USER WRITTEN SOFTWARE MODULES THAT HAVE BEEN PRECOMPILED.

ARGUMENTS:
---

| | |
|---|---|
| MOD-ID | DSPLY[X(10)] |
| SOURCE-LANGUAGE | DSPLY[X(10)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
ERRPRO

ROUTINES CALLED:
---
CDSDATE
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDIRSU
PURPOSE: INSERT INTERNAL SCHEMA RECORD SET USAGE CROSS REF
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDIRSU
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
GIVEN THE GENERATED MODULE NAME AND THE RECORD SET
NUMBER USED IN A SUBTRANSACTION, STORE A SINGLE
CROSS REFERENCE IN THE RECORD_SET_USAGE TABLE.

MOVE ALL INPUTS TO WORKING STORAGE. DO THE INSERT AND
TEST FOR ERROR CODES.

ARGUMENTS:
---

| | |
|---|---|
| GEN-MOD-ID | DSPLY[X(10)] |
| SET-NO | DSPLY[9(6)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
ERRCDM
EOD
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLAD1
SQLFCH
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDLKLUW
PURPOSE: VERIFY AND LOCK A LOGICAL UNIT OF WORK OCCURRENCE.
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDLKLUW
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
-
USE SQL TO SELECT A SINGLE ROW FROM THE CDM TABLE
LOGICAL UNIT OF WORK FOR THE LOGICAL UNIT OF WORK
BEING PRECOMPILED BY THE USER. IF FOUND, RETRIEVE
THE LAST CASE NUMBER ASSIGNED FOR THIS LOGICAL UNIT
OF WORK AND LOCK THE ROW FROM OTHER USERS THAT MAY
TRY TO CHANGE THIS LOGICAL UNIT OF WORK.

ARGUMENTS:
---

| | |
|---|---|
| LUW-NAME | DSPLY[X(30)] |
| LAST-CASE-NO | DSPLY[9(6)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
EOD
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTOC
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLAD1
SQLFCH
SQLCLS
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDP13
PURPOSE: CONTROLS REQUEST PROCESSOR CODE GENERATION
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDP13
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---

- CDP13 IS CALLED FOR EACH CONCEPTUAL TRANSACTION AFTER THE CS-IS TRANSFORM DONE BY CDPRE5 IS COMPLETE.
IT PROCESSES THE SUBTRANSACTIONS IDENTIFIED BY THE CS TO IS DECOMPOSER, DETERMINING WHICH DBMS EACH SUBTRANS APPLIES TO, AND TAKING THE APPROPRIATE ACTION FOR EACH.

MOD FOR REL 2.3:
ADD CALLS TO PRE8C, PRE8D TO GENERATE CS/CS TRANSFORMS FOR AN INNER SELECT AND TO GENERATE CS/CS TRANSFORM FOR A REFERENTIAL INTEGRITY TEST WITH OR LOGIC PRESENT.
ALSO, USE DATA BASE LOOKUPS TO DETERMINE THE NAME OF THE RP DRIVER (AND ITS LOCALITY) FOR EACH RP SUB.

ARGUMENTS:
---

| | |
|---|---|
| SUBTRANS-PROCESS-ID-TABLE | RECRD |
| IS-ACTION-LIST | RECRD |
| IS-QUALIFY-LIST | RECRD |
| ES-ACTION-LIST | RECRD |
| ES-QUALIFY-LIST | RECRD |
| CS-ACTION-LIST | RECRD |
| UV-ABBR-LIST | RECRD |
| CS-QUALIFY-LIST | RECRD |
| JQG | RECRD |
| JQG-ATTRIBUTE-PAIR-LIST | RECRD |
| SET-TABLE | RECRD |
| RFT | RECRD |
| OCCURS-TABLE | RECRD |
| COMPLEX-MAPPING-ALG-TABLE | RECRD |
| MY-HOST | DSPLY[XXX] |
| TARGET-HOST | DSPLY[XXX] |
| FCB-1 | DSPLY[S9(9)] |
| FCB-2 | DSPLY[S9(9)] |
| FCB-3 | DSPLY[S9(9)] |
| FCB-4 | DSPLY[S9(9)] |
| FCB-E | DSPLY[S9(9)] |

| | |
|---|---|
| LUW-NAME | DSPLY[X(30)] |
| BOOLEAN-LIST | RECRD |
| SUBTRANS-BOOLEAN-LIST | RECRD |
| SOURCE-LANGUAGE | DSPLY[X(10)] |
| SUB-LANG | DSPLY[X(10)] |
| CODE-GENERATOR-TABLE | RECRD |
| BLOCK-STACK | RECRD |
| FIRST-INNER-SELECT | DSPLY[9] |
| FORTRAN-VARIABLE-TABLE | RECRD |
| EMBEDDED-LANGUAGE | DSPLY[X(10)] |
| CURSOR-TABLE | RECRD |
| WHENEVER-TABLE | |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---

CHKCDM
ERRCDM
ERRFS
APAT
APINFO
APRK
APGC
SUBPROC
ISAL
ISQUAL
BOOLST
CSQUAL
JQGTBL
APL
SETTAB
RFTABLE
ESAL
ESQUAL
CMAT
UVABBR
CSAL
OCCTAB
SUBBOOL
BLSTACK
FORVAR
CGTABLE
CURTAB
WHENTAB
ERRPRO

ROUTINES CALLED:
---

APNAME
CDPRE8
CDPRE8C
CDPRE8D
CDP10
CDFORP
CDQPS
CDQPC
CDPRE6
CDPRE7
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDPRE
PURPOSE: CDPRE  MAIN ENTRY POINT FOR THE NDML PRECOMPILER
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDPRE
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
- THIS IS THE MAIN ENTRY POINT FOR THE NDML PRECOMPILER
ON INPUT THE USER INTERFACE HAS BEEN PERFORMED.
FIRST VERIFY AND LOCK THE LOGICAL UNIT OF WORK. THEN
CALL CDPRE1 TO BREAK APART THE USER'S
SOFTWARE MODULE INTO THE FOUR PARCELS, THEN CALL
CDVERSM TO VERIFY THE SOFTWARE MODULE AND DELETE
ITS CROSS REFERENCES AND THEN CALL
-

ARGUMENTS:
---

| | |
|---|---|
| AP-FILE-IN | DSPLY[X(80)] |
| ERROR-FILE | DSPLY[X(80)] |
| MY-HOST | DSPLY[XXX] |
| AP-TARGET-HOST | DSPLY[XXX] |
| LUW-NAME | DSPLY[X(30)] |
| CDM-USER-NAME | DSPLY[X(30)] |
| FILE-DELETE-OPTION | DSPLY[X(4)] |
| SUB-LANG | DSPLY[X(10)] |
| SOURCE-LANGUAGE | DSPLY[X(10)] |
| EMBEDDED-LANGUAGE | DSPLY[X(10)] |
| CODE-GENERATOR-TABLE | RECRD |
| FILE-DELETE-LIST | RECRD |
| GOOD-PRECOMPILES | DSPLY[S9(9)] |
| BAD-PRECOMPILES | DSPLY[S9(9)] |
| COMP-PROC-FILE | DSPLY[X(80)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
ERRFS
SQLVAR
CGTABLE
FLDELST
ERRPRO

ROUTINES CALLED:
---

OPNFIL
SQLSCA
SQLADR
SQLLO1
CDDBMSS
CDVERLW
CDPRE1
CDVERSM
CDPRE2
CDP11
CDSLFN
CDSLMN
CDRSFN
CDRSMN
CDCJOB
CLSFIL
ERRPRO
RPTERR
CDUPDNM
CDECHK
OUTFIL
INPFIL
UNPLINE
CURLCNT
PROEXEC

DOCGROUP PS41200 Module Documentation

NAME: CDRPDFU
PURPOSE: DROP ALL REFERENCES TO DATA FIELD FOR A GIVEN MODULE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDRPDFU
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: SHARE

DESCRIPTION:
---

-
USE SQL TO DELETE ALL ROWS FROM THE DATA FIELD
USAGE CDM TABLE FOR A GIVEN SOFTWARE MODULE.

ARGUMENTS:
---

| | |
|---|---|
| MOD-ID | DSPLY[X(10)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
EOD
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLWNR
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDRPESU
PURPOSE: DROP ALL EXTERNAL SCHEMA REFERENCES FOR A GIVEN
MODULE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDRPESU
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: SHARE

DESCRIPTION:
---
-
USE SQL TO DELETE ALL ROWS FROM THE EXTERNAL SCHEMA
USAGE CDM TABLE.

ARGUMENTS:
---
MOD-ID DSPLY[X(10)]
RET-STATUS DSPLY[X(5)]

INCLUDE FILES:
---
CHKCDM
ERRCDM
EOD
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLWNR
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDRPRSU
PURPOSE: DROP ALL REFERENCES TO RECORD SET FOR A GIVEN MODULE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDRPRSU
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: SHARE

DESCRIPTION:
---
USE SQL TO DELETE ALL ROWS FROM THE RECORD SET
USAGE CDM TABLE GIVEN A SOFTWARE MODULE NAME.

ARGUMENTS:
---
MOD-ID DSPLY[X(10)]
RET-STATUS DSPLY[X(5)]

INCLUDE FILES:
---
CHKCDM
ERRCDM
EOD
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLWNR
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDRPXRF
PURPOSE: DROP REFERENCES TO GENERATED CODE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDRPXRF
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: SHARE

DESCRIPTION:
---

GIVEN THE NAME OF THE USER MODULE BEING PRECOMPILED
OR DROPPED, THIS ROUTINE WILL SEARCH THE CDM(AS-BUILT)
TABLE "GENERATED MODULE" TO DETERMINE ALL GENERATED
MODULES ASSOCIATED WITH THE GIVEN INPUT USER MODULE NAME.
FOR EACH ONE OF THESE FOUND, A ROUTINE WILL BE CALLED
TO DELETE IT FROM CROSS REFERENCE TABLES DATA FIELD USAGE,
RECORD SET USAGE AND FROM THE SOFTWARE MODULE TABLE
ITSELF. EACH FILE NAME AND HOST OF THE GENERATED CODE IS
RECORDED IN THE FILE-DELETE-LIST

ARGUMENTS:
---

| | |
|---|---|
| USER-MOD-ID | DSPLY[X(10)] |
| FILE-DELETE-OPTION | DSPLY[X(4)] |
| FILE-DELETE-LIST | RECRD |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---

CHKCDM
ERRCDM
EOD
FLDELST
ERRPRO

ROUTINES CALLED:
---

SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTOC
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLAD1
SQLFCH
CDRPRSU
CDRPDFU
CDRPSM
SQLCLS
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDRSFN
PURPOSE: RESET FILE NAME ASSIGNMENT TABLE TO BEGINNING
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDRSFN
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: SHARE

DESCRIPTION:
---
THIS ROUTINE WILL SET THE PROPER FLAG TO CALL
CDF01 TO RESET AND CLEAR THE FILE NAME TABLE
THIS ROUTINE SHOULD
BE CALLED BEFORE ANY FILE NAMES ARE TO BE HANDED OUT
(AN EMPTY TABLE WILL FORCE A DATA BASE RETRIEVAL OF THE
LAST FILE NAME USED) AND IT SHOULD BE CALLED IN THE
EVENT OF A ROLLBACK.

ARGUMENTS:
---
RET-STATUS DSPLY[X(5)]

INCLUDE FILES:
---
ERRCDM
ERRPRO

ROUTINES CALLED:
---
CDF01
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDRTSND
PURPOSE: RETRIEVES INTERNAL SCHEMA METADATA
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDRTSND
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
- THIS ROUTINE WILL USE THE DATA BASE ID AND RECORD
ID AND ACCESS THE CDM FOR FOR ITS INTERNAL TYPE,
SIZE AND NUMBER OF DECIMAL DIGITS.

SELECT DATA TYPE, SIZE AND NUMBER OF DECIMAL DIGITS
FOR A PARTICULAR DFID AND RTID. IF NOT FOUND,
GENERATE AN ERROR MESSAGE.

ARGUMENTS:
---

| | |
|---|---|
| DFID | DSPLY[X(30)] |
| RTID | DSPLY[X(30)] |
| DBID | DSPLY[9(6)] |
| IS-TYPE | DSPLY[X] |
| IS-SIZE | DSPLY[999] |
| IS-ND | DSPLY[99] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
ERRCDM
CHKCDM
EOD
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLAD1
SQLFCH
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDSLFN
PURPOSE: SAVE LAST FILE NAME ASSIGNED
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDSLFN
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: SHARE

DESCRIPTION:
---
-
THIS ROUTINE WILL SET THE PROPER FLAG TO CALL
CDF01 TO DO A DATA BASE SAVE OF THE LAST FILE
NAME USED FOR EACH HOST. THIS ROUTINE SHOULD
BE CALLED AFTER ALL FILE NAMES NEEDED ARE OBTAINED
AND JUST BEFORE THE COMMIT POINT.

ARGUMENTS:
---
RET-STATUS DSPLY[X(5)]

INCLUDE FILES:
---
ERRCDM
ERRPRO

ROUTINES CALLED:
---
CDF01
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDUPDLW
PURPOSE: UPDATE THE LAST CASE NUMBER ON THE LOCKED LUW ROW
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDUPDLW
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
GIVEN THE NAME OF THE LOGICAL UNIT OF WORK BEING
PRECOMPILED, AND THE LAST ASSIGNED CASE NUMBER
AFTER A SUCCESSFUL PRECOMPILATION, UPDATE THE
LOCKED LOGICAL UNIT OF WORK ROW.

ARGUMENTS:
---
LUW-NAME DSPLY[X(30)]
LAST-CASE-NO DSPLY[9(6)]
RET-STATUS DSPLY[X(5)]

INCLUDE FILES:
---
CHKCDM
ERRCDM
ERRPRO

ROUTINES CALLED:
---
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLWNR
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDUPDNM
PURPOSE: UPDATE NDML MODULE WITH PRECOMPILATION STATUS
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDUPDNM
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---

ARGUMENTS:
---
| | |
|---|---|
| MOD-ID | DSPLY[X(10)] |
| STATUS-CODE | DSPLY[X] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
EOD
ERRPRO

ROUTINES CALLED:
---
CDSDATE
SQLSCA

SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLWNR
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: CDVERSM
PURPOSE: VERIFY SOFTWARE MODULE TO BE PRECOMPILED
LANGUAGE: VAX-11 COBOL
SOURCE FILE: CDVERSM
SOURCE FILE TYPE: PCO
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
-
LOOK UP THE NAMED SOFTWARE MODULE AS BEING A PREVIOUSLY DEFINED NDML MODULE. IF FOUND COMPARE ITS LOG UNIT OF WORK TO THE ONE THE USER SAYS HE IS PRECOMPILING. IF THEY ARE NOT THE SAME, THE USER HAS MADE AN ERROR. IF THEY ARE THE SAME ALL CROSS REFERENCES SHOULD BE DELETED (IDENTIFYING ALL OBSOLETE GENERATED CODE, PERFORMED BY CDRPXRF). WE SHALL THEN DROP ALL EXTERNAL SCHEMA CROSS REFERENCES TO THIS NDML MODULE. IF THE SOFTWARE MODULE IS NOT FOUND IT IS NEW. IN THIS CASE WE MUST INSERT AN OCCURRENCE OF NDML MODULE AND SOFTWARE MODULE. THE INSERTS IN THIS CASE WILL BE COMMITED AND THE LOCK ON THE LOGICAL UNIT OF WORK RE-OBTAINED (CDLKLUW).

ARGUMENTS:
---

| | |
|---|---|
| USER-MOD-ID | DSPLY[X(10)] |
| LUW-NAME | DSPLY[X(30)] |
| SOURCE-LANGUAGE | DSPLY[X(10)] |
| LUW-LOCK-STATUS | DSPLY[9] |
| FILE-DELETE-LIST | RECRD |
| FILE-DELETE-OPTION | DSPLY[X(4)] |
| LAST-CASE-NO | DSPLY[9(6)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
EOD
FLDELST
ERRPRO

ROUTINES CALLED:
---
CDLKLUW
SQLSCA
SQLBS1
SQLSCH
SQLSCC
SQLTFL
SQLOPN
SQLOSQ
SQLADR
SQLAB1
SQLEXE
SQLAD1
SQLFCH
CDRPXRF
CDRPESU
CDDGAP
CDINSSM
CDINSNM
CDDBMSS
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: GENRPD
PURPOSE: GENERATE GENRPD REQUEST PROCESSOR DRIVER ROUTINES
LANGUAGE: VAX-11 COBOL
SOURCE FILE: GENRPD
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDML

DESCRIPTION:
---
- THIS ROUTINE ACTS AS 1 OF POSSIBLY MANY
USER INTERFACE FRONT-ENDS TO THE GENRPD
REQUEST PROCESSOR DRIVER. IT WILL OBTAIN
THE LOGICAL UNIT OF WORK NAME FROM THE USER
THAT HE WISHES TO HAVE RP DRIVERS GENERATED FOR.
IT WILL THEN CALL THE CDP14 ROUTINE WHICH WILL
HANDLE THE CODE GENERATION. ON COMPLETION OF
THE CALL, RETURN STATUS WILL BE INTERPRETED FOR

THE USER, AND THE CDRCL (REMOTE COMPILE AND
LINK FUNCTION WILL BE CALLED TO DISTRIBUTE,
COMPILE AND LINK THE GENERATED PROGRAMS.

-
FIRST OF ALL ESTABLISH CONNECTION WITH NTM VIA INITEX
THEN OPEN AND READ INPUT FILE OF COMMANDS, AND FOR EACH
CARD CALL THE CDP14 GENERATOR. AFTER A SUCCESSFUL
EXECUTION, REPORT PERTINENT INFORMATION TO THE USER
USING A FORMATTED DISPLAY. WHEN FINISHED DISCONNECT
WITH NTM WITH A TRMNAT CALL.

INCLUDE FILES:
---
FILSTAT
ERRCDM
ERRFS
SRVRET
CGTABLE
ERRPRO

ROUTINES CALLED:
---
OPNFIL
INPFIL
CDP14
CLSFIL
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: LOGANA
PURPOSE: DETERMINES ERROR STATUS OF RCL FUNCTION
LANGUAGE: VAX-11 COBOL
SOURCE FILE: LOGANA
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDDL

DESCRIPTION:
---
- SCANS THE LOG FILE RETURNED FROM
NTM ROUTINE 'SNDRCLE' VIA 'RCV'
FOR ANY ERRORS IN THE COMPILE OR
LINK WHICHEVER ONE WAS SELECTED.
CALLED BY CDRCL.

ARGUMENTS:
---
| | |
|---|---|
| LOG-FILE-NAME | DSPLY[X(30)] |
| TARGET-HOST | DSPLY[XXX] |

| | |
|---|---|
| CURRENT-HOST | DSPLY[XXX] |
| ERROR-KEYWORD | DSPLY[X(10)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
CHKCDM
ERRCDM
ERRPRO

ROUTINES CALLED:
---
ERRPRO

INCLUDE FILES:
---
FILSTAT
ERRCDM
ERRFS
CGTABLE
FLDELST
ERRPRO

ROUTINES CALLED:
---
OPNFIL
INPFIL
LOWUPP
CDPRE
CLSFIL
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: RCMOD
PURPOSE: MARK PREVIOUSLY ASSIGNED MODULES AS REUSABLE
LANGUAGE: VAX-11 COBOL
SOURCE FILE: RCMOD
SOURCE FILE TYPE: COB
HOST:
SUBSYSTEM: CDM
SUBDIRECTORY: NDDL

DESCRIPTION:
---
THIS ROUTINE MUST BE USED TO MARK ALL PREVIOUSLY ASSIGNED MODULES GENERATED FOR THE USER MODULE NAME AS REUSEABLE. IT EXPECTS THE NAME OF A USER MODULE.

MODIFIED FOR RELEASE 2.2 - IGNORE UNSOLICITED MESSAGES (AUGUST 1986)

ARGUMENTS:
---

| | |
|---|---|
| USER-MOD-NAME | DSPLY[X(10)] |
| RET-STATUS | DSPLY[X(5)] |

INCLUDE FILES:
---
SRVRET
ERRCDM
CHKCDM
ERRPRO

ROUTINES CALLED:
---
CDFUNC
NSEND
RCV
ERRPRO

DOCGROUP PS41200 Module Documentation

NAME: RPTERR
PURPOSE: OUTPUT PRECOMPILER ERROR MESSAGES TO AP LISTING
LANGUAGE: VAX-11 COBOL
SOURCE FILE: RPTERR
SOURCE FILE TYPE: C
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU

DESCRIPTION:
---
-

THIS PROGRAM OUTPUTS ERROR MESSAGES TO AP
LISTING FROM PRECOMPILER-ENCOUNTERED ERRORS.
THIS ROUTINE SIMPLY OPENS THE LISTING AT END,
WRITES THE MESSAGE AND CLOSES THE LISTING.

ARGUMENTS:
---

| | |
|---|---|
| FCB-F | DSPLY[S9(9)] |
| ERRMESS | DSPLY[X(60)] |

INCLUDE FILES:
---
ERRFS
FILSTAT
ERRPRO

ROUTINES CALLED:
---
OUTFIL
ERRPRO

### 3.10.5 Include File Descriptions

The following list contains a purpose and description of each include file in the documentation group as specified in the source code. The language it is written in is also given.

DOCGROUP PS41200 Include File Description

FILE NAME: ALFABET
PURPOSE: LETTERS CONTAINED IN THE ENGLISH ALPHABET
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

THIS IS THE ENGLISH ALPHABET, THE LETTERS ARE USED FOR ASSIGNING THE NEXT UNIQUE NAME WHEN THE NUMBERS RUN OUT.

ALFABET.INC

DOCGROUP PS41200 Include File Description

FILE NAME: APAT
PURPOSE: ACCESS PATH TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS THE ACCESS PATH FOR ONE SUBTRANSACTION FOR A NDML REQUEST.

DOCGROUP PS41200 Include File Description

FILE NAME: APGC
PURPOSE: GENERIC CODASYL COMMAND TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

HOLDS THE GENERIC CODASYL DML COMMANDS FOR AN ACCESS PATH OF AN NDML REQUEST

DOCGROUP PS41200 Include File Description

FILE NAME: APINFO
PURPOSE: ACCESS PATH INFORMATION TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

THIS IS A COLLECTION OF INFORMATION STORED IN A NUMBER OF VARIOUS TABLES USED BY THE ACCESS PATH TABLE AND THE GENERIC CODASYL TABLE. SEE CDMP SPEC, PRE6

APINFO.INC

DOCGROUP PS41200 Include File Description

FILE NAME: APL
PURPOSE: JOIN QUERY ATTRIBUTE PAIR LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS INFORMATION ABOUT THE JOIN ATTRIBUTES FOR NDML SUBTRANSACTIONS

DOCGROUP PS41200 Include File Description

FILE NAME: APRK
PURPOSE: TABLE OF RECORD KEYS FOR CODASYL ACCESS PATHS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS INFORMATION FOR THE KEYS OF RECORDS CONTAINED IN THE CURRENT ACCESS PATH

DOCGROUP PS41200 Include File Description

FILE NAME: BLSTACK
PURPOSE: FORTRAN VARIABLE TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DOCGROUP PS41200 Include File Description

FILE NAME: BOOLST
PURPOSE: BOOLEAN LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS THE BOOLEAN OPERATORS, PARENTHESES, AND POINTERS TO THE TYPE 2 CONDITIONS FOR AN NDML TRANSACTION

DOCGROUP PS41200 Include File Description

FILE NAME: CCTABLE
PURPOSE: PROCESS ERROR INCLUDE FILE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DOCGROUP PS41200 Include File Description

FILE NAME: CGTABLE
PURPOSE: CODE GENERATING TABLE- TRACKS ALL GENERATED SOFTWARE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

HOLDS PERTINENT RESULTS
ABOUT ALL CODE GENERATED OR MODIFIED BY THE
PRECOMPILER

DOCGROUP PS41200 Include File Description

FILE NAME: CHKCDM
PURPOSE: IISS CDMP CHECK STATUS CODES
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS ALL STATUS CODES FOR THE *
CDMP MODULES *

DOCGROUP PS41200 Include File Description

FILE NAME: CMAT
PURPOSE: COMPLEX MAPPING ALGORITHM TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

THIS TABLE IDENTIFIES THE SOFTWARE MODULES AND PARAMETERS THAT ARE NEEDED TO PERFORM COMPLEX MAPPINGS BETWEEN CS AND IS FORMATS

DOCGROUP PS41200 Include File Description

FILE NAME: CSAL
PURPOSE: CONCEPTUAL SCHEMA ACTION LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

TABLE TO HOLD CONCEPTUAL DATA ABOUT THE REQUEST

NOTE!!!!!! This table is cloned in both cdpre5 and cdpre4 so any changes made to this structure needs to be made in these cloned versions. Clone version is CSALX for CDPRE4.
NOTE AGAIN Any changes to the CS-ACTION-ENTRY must be reflected
in CDP10B in the C code generation section. The length of CS-STRING2 has been hard coded in the generated C code in paragraph
210-GEN-MOVE-OF-TABLES.

***** THE CONCEPTUAL SCHEMA ACTION LIST

DOCGROUP PS41200 Include File Description

FILE NAME: CSQUAL
PURPOSE: CONCEPTUAL SCHEMA QUALIFY LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS CONCEPTUAL SCHEMA INFORMATION FOR
THE REQUEST'S QUALIFICATION

NOTE!!!!!
This table is cloned as CSQUALX in CDPRE4. If it is changed, CSQUALX must be changed also.

THE CONCEPTUAL SCHEMA QUALIFY LIST

DOCGROUP PS41200 Include File Description

FILE NAME: CURTAB
PURPOSE: PROCESS ERROR INCLUDE FILE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DOCGROUP PS41200 Include File Description

FILE NAME: EOD
PURPOSE: SQL END OF DATA DEFINITION
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DOCGROUP PS41200 Include File Description

FILE NAME: ERRCDM
PURPOSE: IISS ERROR STATUS CODES FOR CDMP MODULES
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS ALL ERROR CODES USED BY CDMP *

DOCGROUP PS41200 Include File Description

FILE NAME: ERRFS
PURPOSE: ERRFS.INC - FILE I/O PRIMITIVES (FILE SERVICES)
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

IISS ERROR CODES

THIS FILE DEFINES THE FS STATUS
CODES IN COBOL FORMAT

DOCGROUP PS41200 Include File Description

FILE NAME: ERRPRO
PURPOSE: PROCESS ERROR INCLUDE FILE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DOCGROUP PS41200 Include File Description

FILE NAME: ESAL
PURPOSE: EXTERNAL SCHEMA ACTION LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS THE EXTERNAL SCHEMA INFORMATION FOR AN NDML REQUEST

DOCGROUP PS41200 Include File Description

FILE NAME: ESQUAL
PURPOSE: EXTERNAL SCHEMA QUALIFY LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS EXTERNAL SCHEMA INFORMATION FOR THE NDML QUALIFICATION

THE EXTERNAL SCHEMA QUALIFY LIST

DOCGROUP PS41200 Include File Description

FILE NAME: FILSTAT
PURPOSE: VARIABLE DEFINITION FOR FILE STATUS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

FILE USAGE FILE STATUS PARAMETER

FILSTAT
FILE USAGE FILE STATUS PARAMETER
SIZE AND THE 88 VALUE ARE PROBABLY MACHINE DEPENDENT
(THIS IS FOR VAX-11 COBOL)

DOCGROUP PS41200 Include File Description

FILE NAME: FLDELST
PURPOSE: PROVIDE A TEMPORARY LIST OF FILES OF CODE TO BE DELETED
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

THE NAMES OF FILES AND MODULES OF OBSOLETE GENERATED CODE ARE STORED IN THIS TABLE DURING THE PRECOMPILATION OF A SINGLE USER MODULE. THEY MUST BE STORED UNTIL PRECOMPILATION IS COMPLETE AND SUCCESSFUL AND THEN THE NAMES ARE USED TO DELETE THE FILES.

DOCGROUP PS41200 Include File Description

FILE NAME: FORVAR
PURPOSE: FORTRAN VARIABLE TABLE
LANGUAGE: VAX-11 COBOL

*DESCRIPTION:*
---

THIS TABLE HOLDS THE ORIGINAL FORTRAN VARIABLE AND ITS GENERATED SIX-CHARACTER COUNTERPART.

DOCGROUP PS41200 Include File Description

FILE NAME: ISAL
PURPOSE: INTERNAL SCHEMA ACTION LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS INTERNAL SCHEMA INFORMATION ABOUT AN NDML REQUEST

THE INTERNAL SCHEMA ACTION LIST

DOCGROUP PS41200 Include File Description

FILE NAME: ISQUAL
PURPOSE: INTERNAL SCHEMA QUALIFY LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS INTERNAL SCHEMA INFORMATION FOR AN NDML QUALIFICATION

THE INTERNAL SCHEMA QUALIFY LIST

DOCGROUP PS41200 Include File Description

FILE NAME: JQGTBL
PURPOSE: JOIN QUERY GRAPH TELLS HOW TO CONNECT SUBTRANSACTIONS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

DOCGROUP PS41200 Include File Description

FILE NAME: OCCTAB
PURPOSE: OCCURS TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS INFORMATION ABOUT THE SUBSCRIPTING STRUCTURE FOR REPEATING FIELDS/GROUPS. THERE MAY BE MULTIPLE ENTRIES IN THE TABLE HAVING THE SAME SUBTRANS, RTNO AND NEST-ID.

DOCGROUP PS41200 Include File Description

FILE NAME: P5DFS
PURPOSE: DATAFIELD TABLE - HOLDS ALL DATAFIELD NUMBERS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

FOR A RECORD/DATABASE COMBINATION
FOR CODASYL
- USED TO TRACK ALL FIELDS, EVEN IF NOT SELECTED, FOR BETTER IMPACT PROCESSING

DOCGROUP PS41200 Include File Description

FILE NAME: RFTABLE
PURPOSE: THE RESULT FIELD TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS CONCEPTUAL SCHEMA INFORMATION ABOUT THE RESULTS OF AN NDML REQUEST

THE RESULT FIELD TABLE

WHEN CHANGING THE STRUCTURE OF THIS TABLE BE SURE TO CHANGE THE LAYOUT IN THE LINKAGE SECTION OF THE DRS (CDS01) WHICH WAS COPIED FROM THIS.

DOCGROUP PS41200 Include File Description

FILE NAME: SBSTLST
PURPOSE: WS DEFINITION FOR THE SUBSTITUTION LIST TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

SUBSTITUTION-LIST REPRESENTS THE INPUT TABLE OF SUBSTITUTION PARAMETERS FOR THE CDMACR MACRO EXPANSION SUBROUTINE

DOCGROUP PS41200 Include File Description

FILE NAME: SETTAB
PURPOSE: LIST OF SETS OWNER-MEMBER RELATIONSHIPS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

SET TABLE TO KEEP TRACK OF CODASYL NDML REQUESTS
IN TERMS OF OWNER AND MEMBER RELATIONSHIPS

DOCGROUP PS41200 Include File Description

FILE NAME: SQLVAR
PURPOSE: SQL VARIABLE TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

THIS TABLE HOLDS THE VARIABLES DECLARED IN THE
EXEC SQL BEGIN DECLARE SECTION.

DOCGROUP PS41200 Include File Description

FILE NAME: SRVRET
PURPOSE: IISS ERROR STATUS CODES FOR CDMP MODULES
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS ALL ERROR CODES USED BY CDMP *
MODULES FOR ERROR HANDLING *

DOCGROUP PS41200 Include File Description

FILE NAME: SUBBOOL
PURPOSE: SUBTRANS BOOLEAN LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

CONTAINS ALL THE BOOLEAN OPERATORS, PARENTHESES, AND CONDITIONS WHICH CAN BE SATISFIED AT THE INTERNAL SCHEMA LEVEL, FOR EACH SUBTRANSACTION.

DOCGROUP PS41200 Include File Description

FILE NAME: SUBPROC
PURPOSE: SUBTRANSACTION PROCESSES ID TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

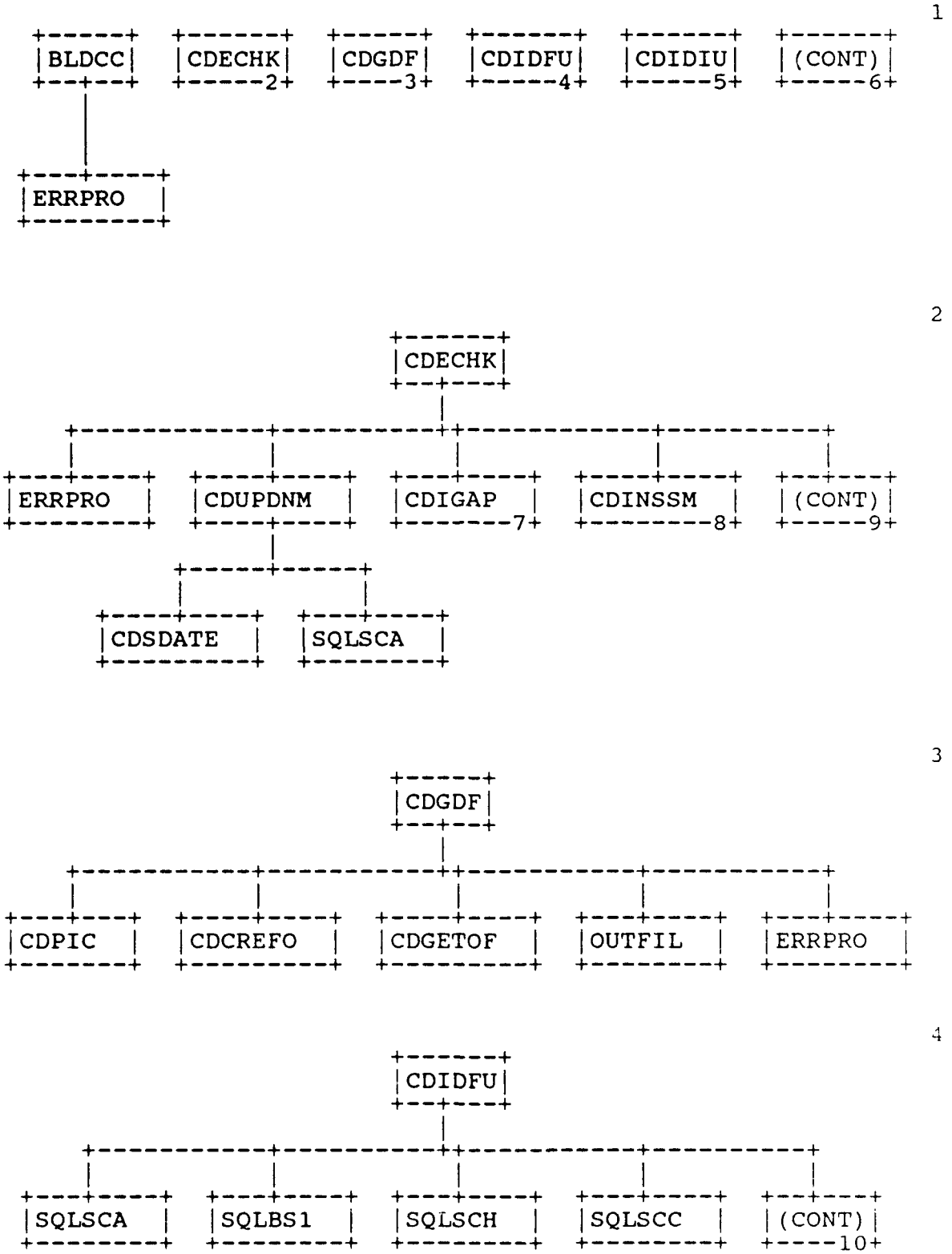
THIS TABLE MUST HAVE THE SAME NUMBER OF OCCURS AS THE RITABLE.INC AND QITABLE.INC SINCE THEY ARE PARALLEL TABLES.

DOCGROUP PS41200 Include File Description

FILE NAME: UVABBR
PURPOSE: USER VIEW ABBREVIATION LIST
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
---

### 3.10.6 Hierarchy Chart



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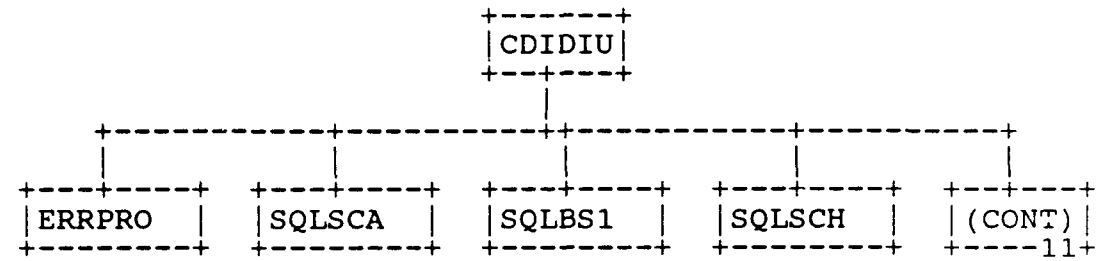
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ERRPRO
SQLSCA
SQLBS1
SQLSCH
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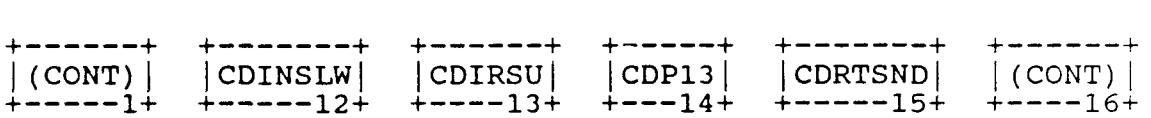
11

6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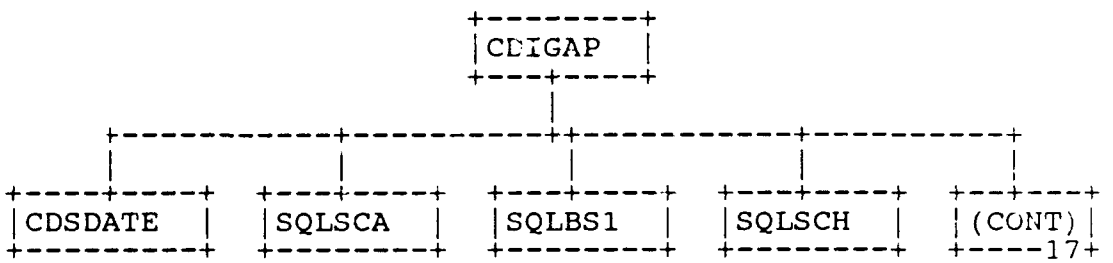
CDP13
14
CDRTSND
15
(CONT)
16

7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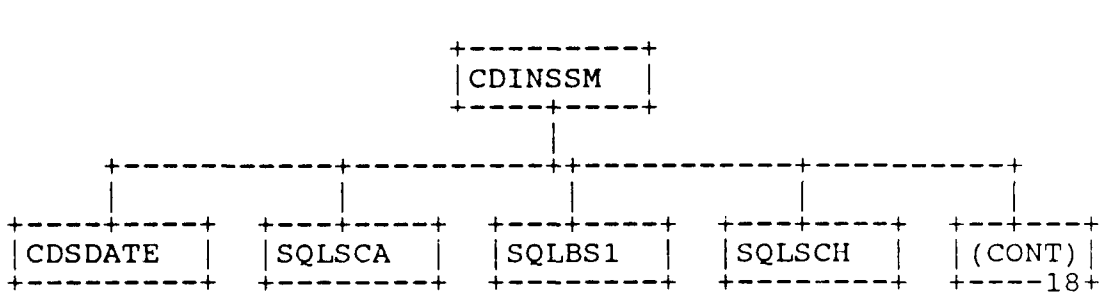
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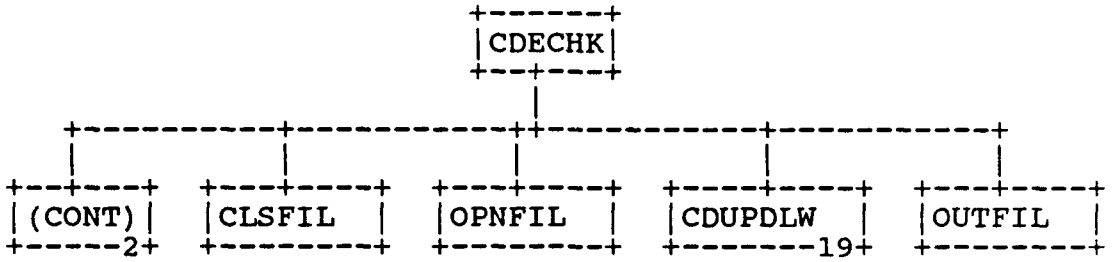
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OUTFIL

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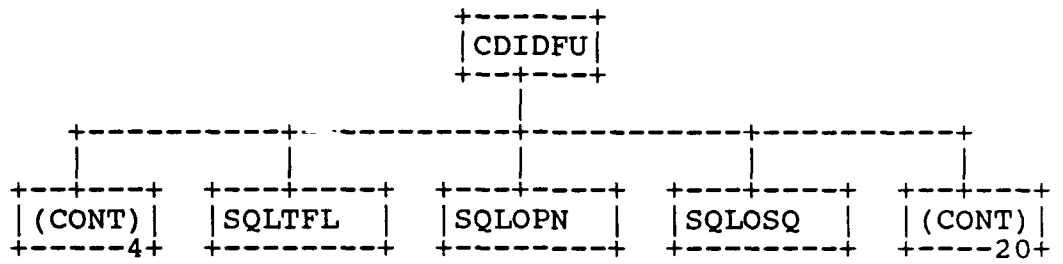
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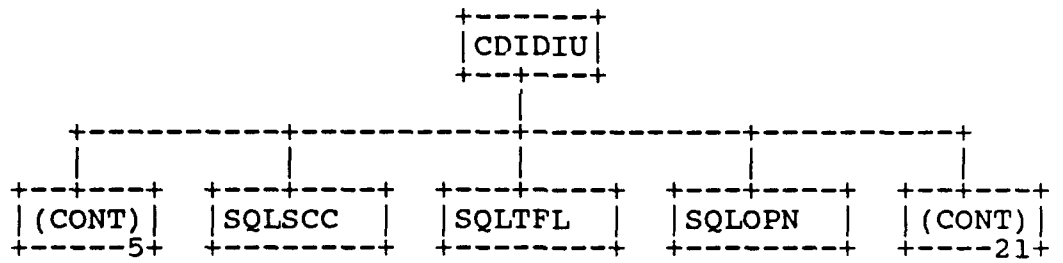
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SQLOPN
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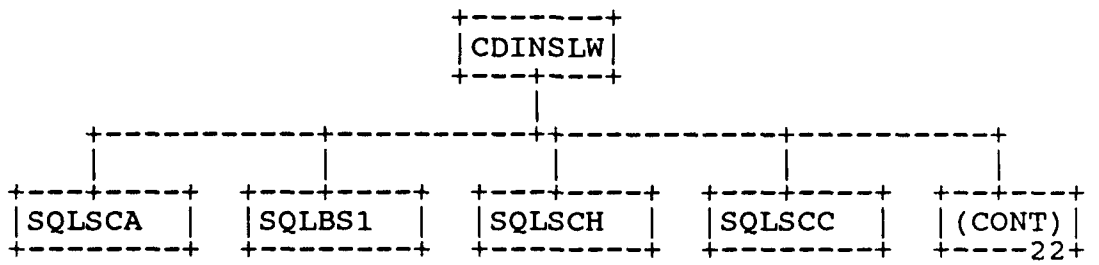
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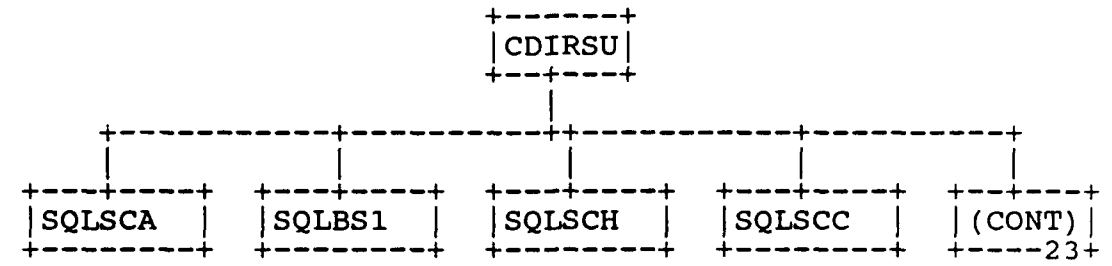
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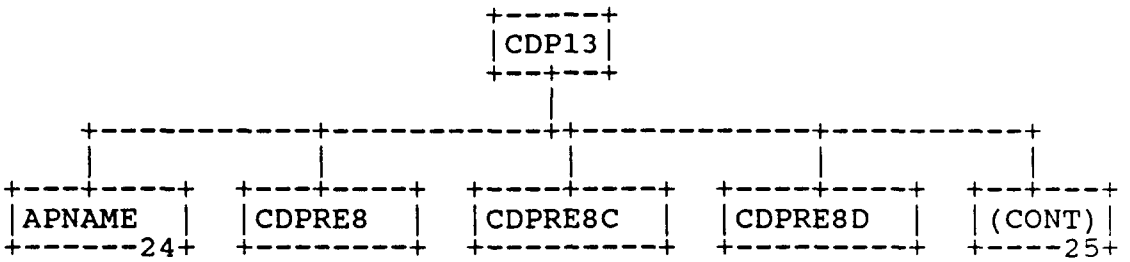
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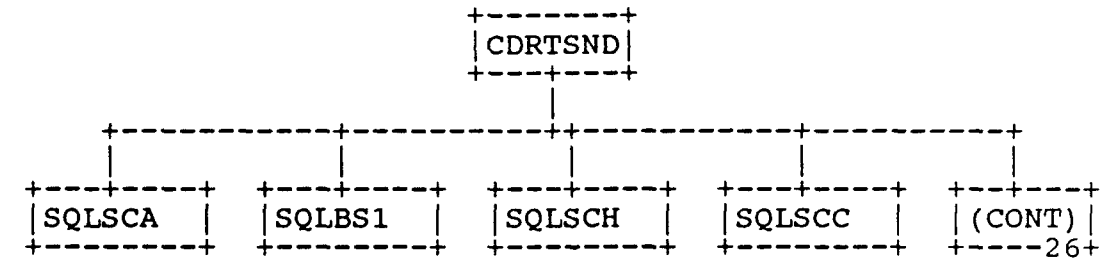
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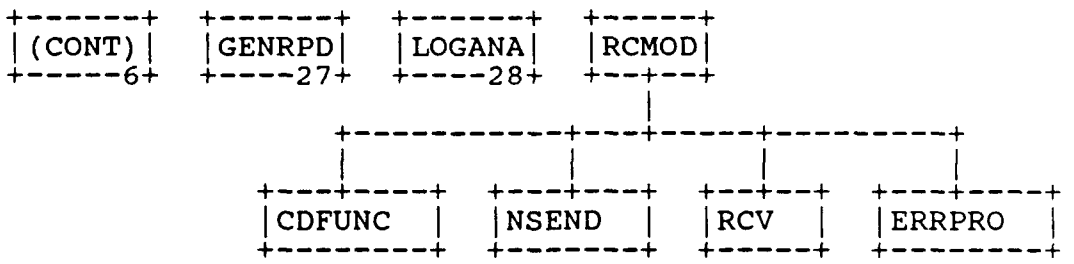
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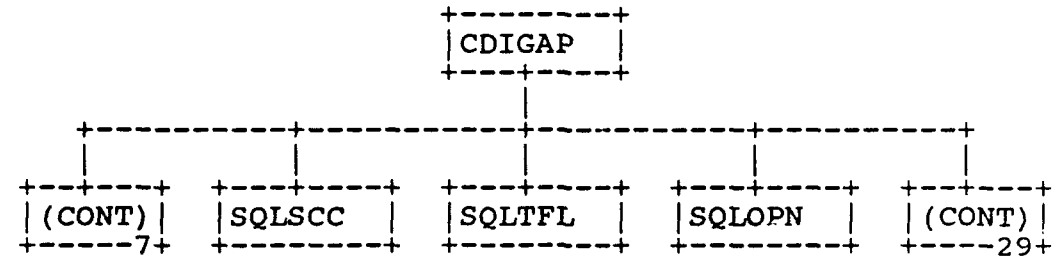
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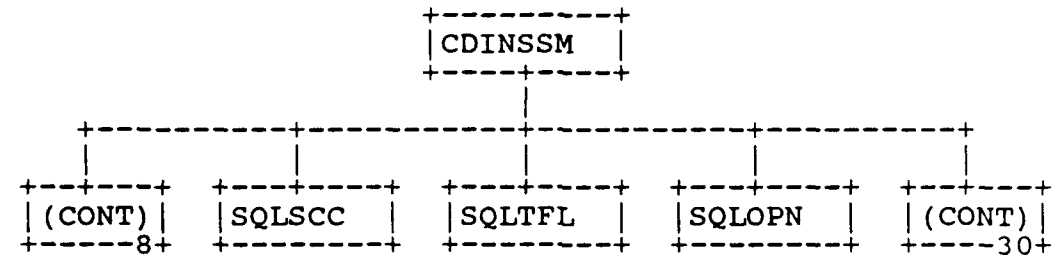
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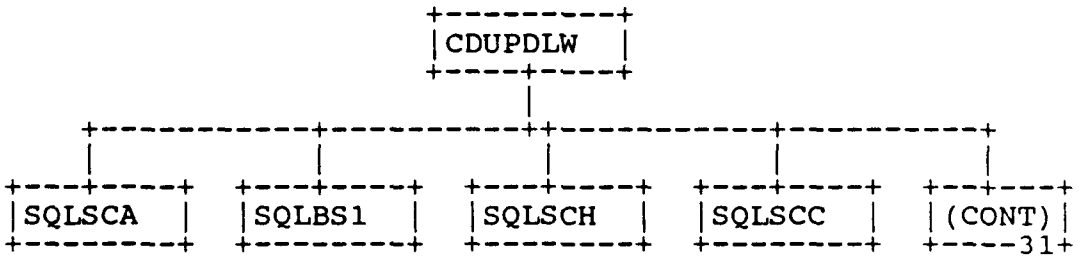
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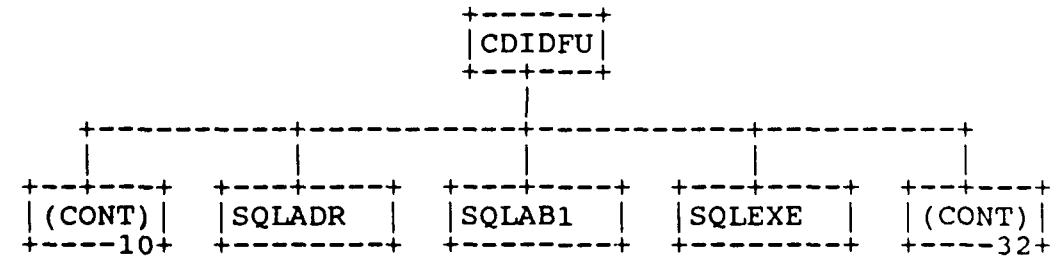
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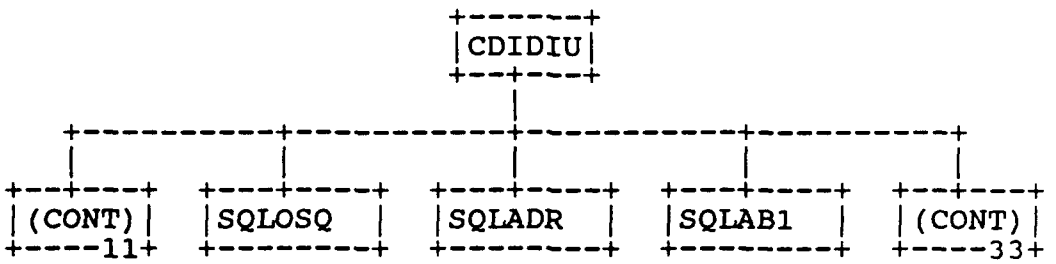
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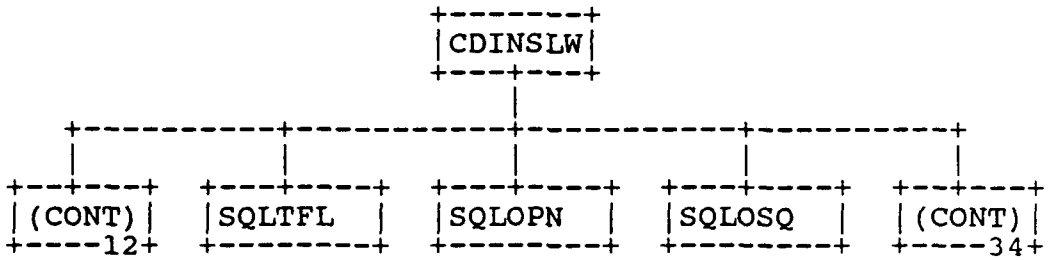
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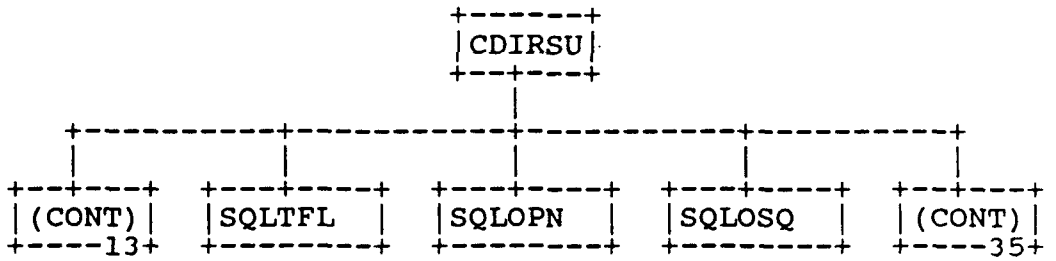
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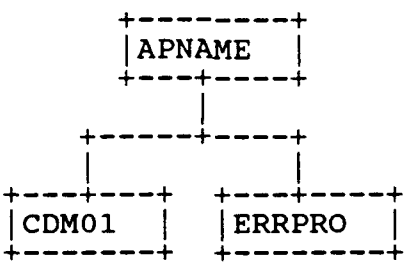
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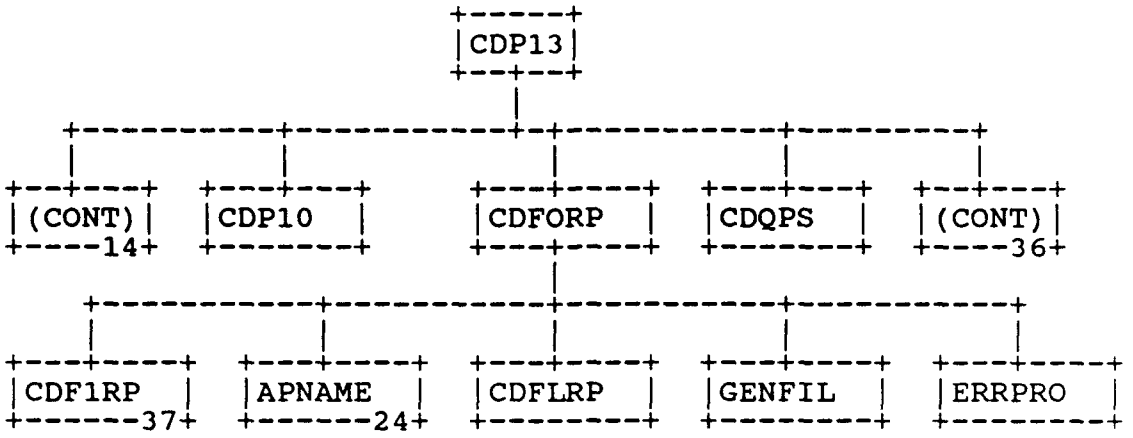
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CDQPS
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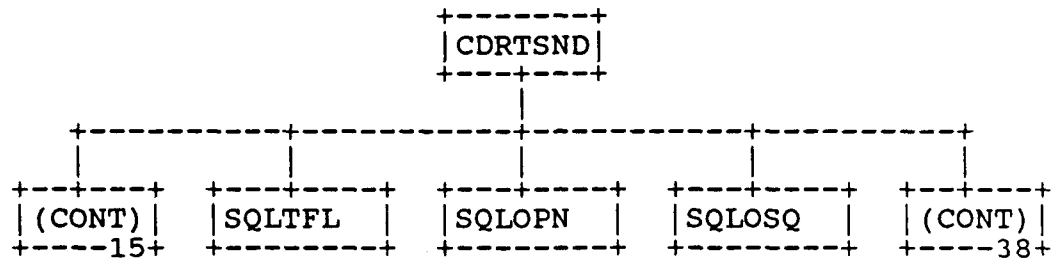
GENFIL
ERRPRO

26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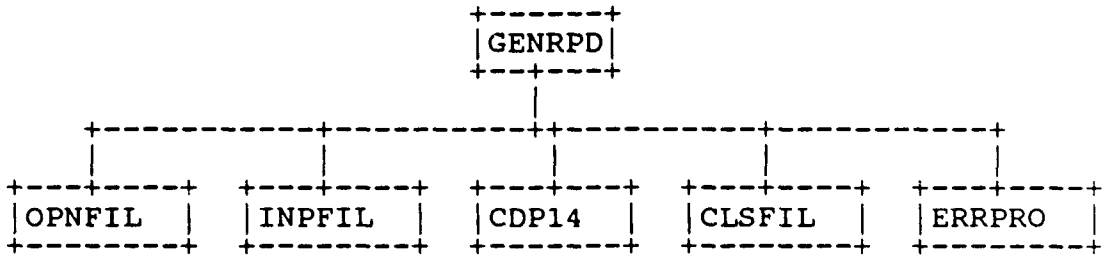
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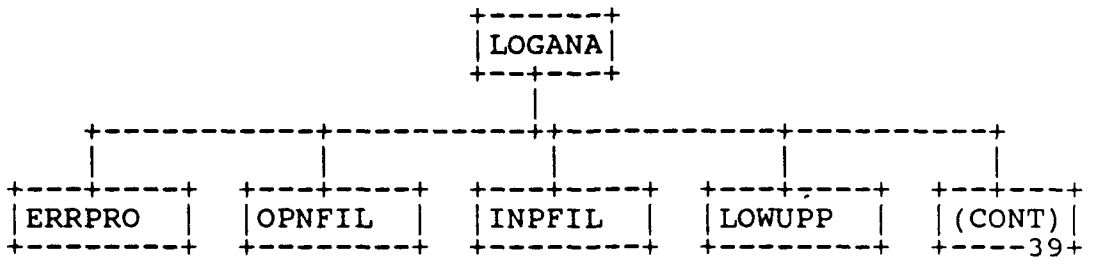
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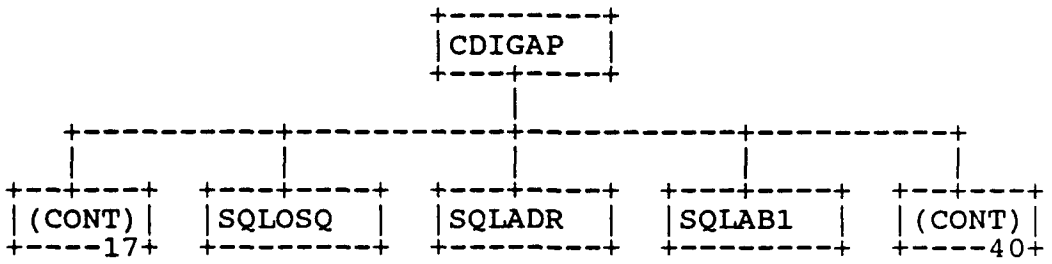
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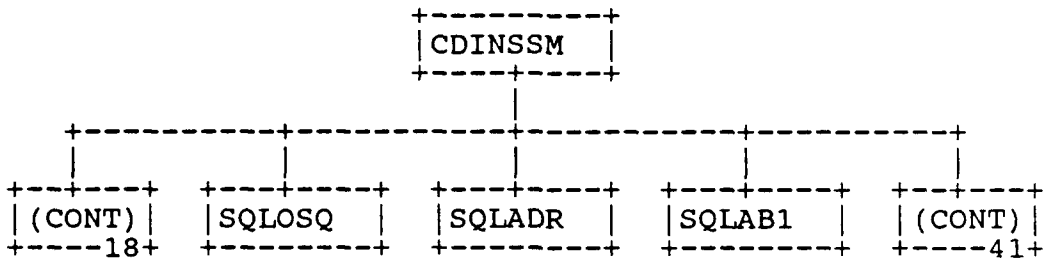
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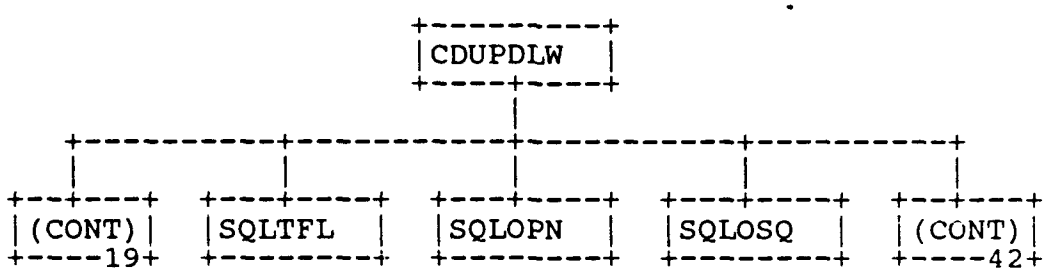
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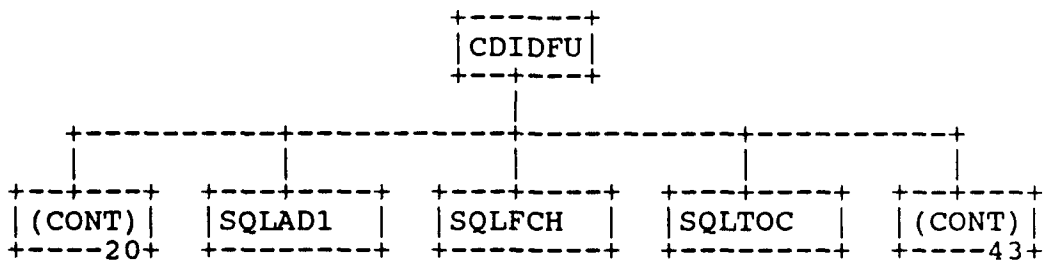
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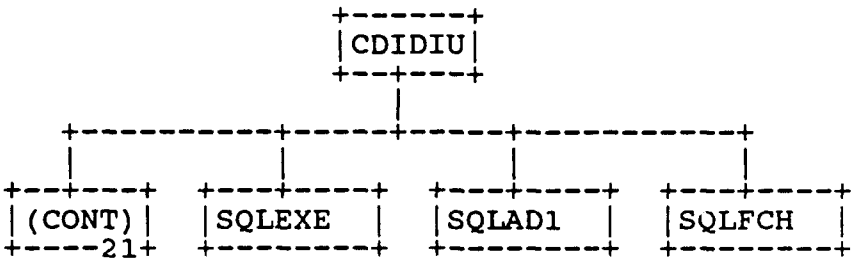
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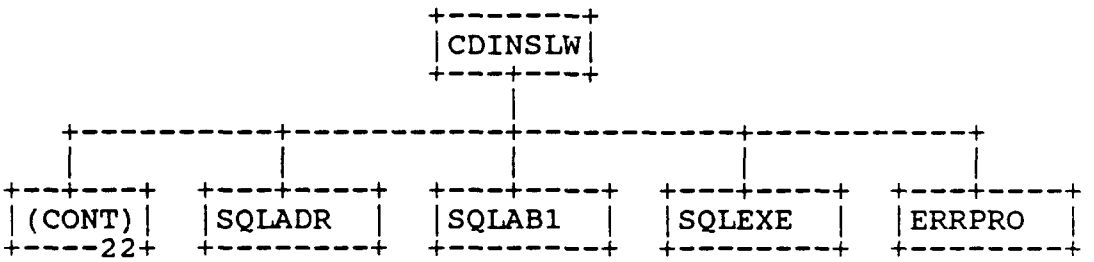
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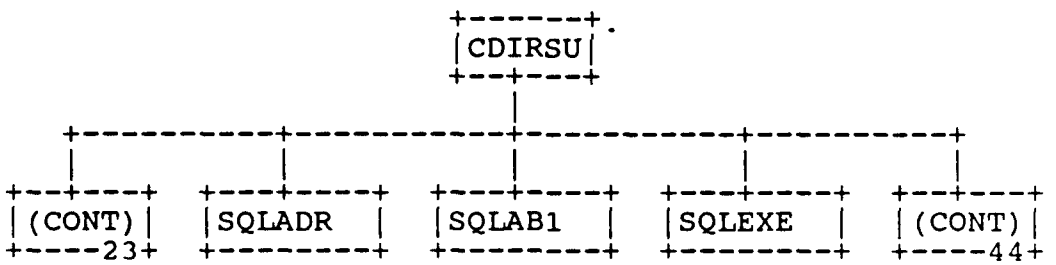
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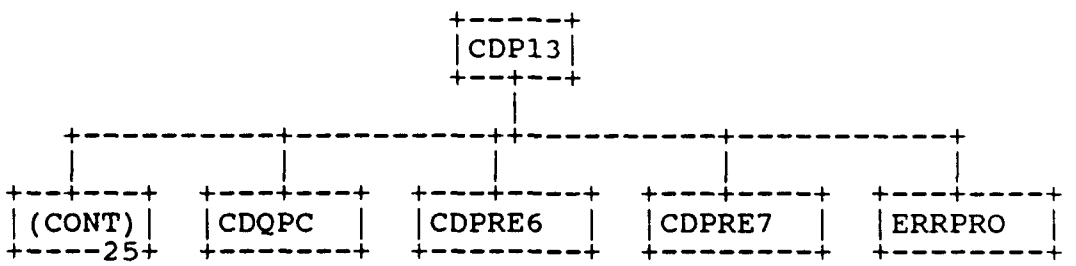
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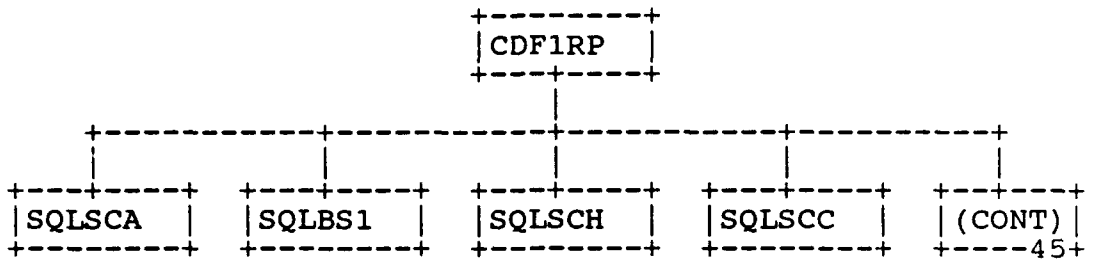
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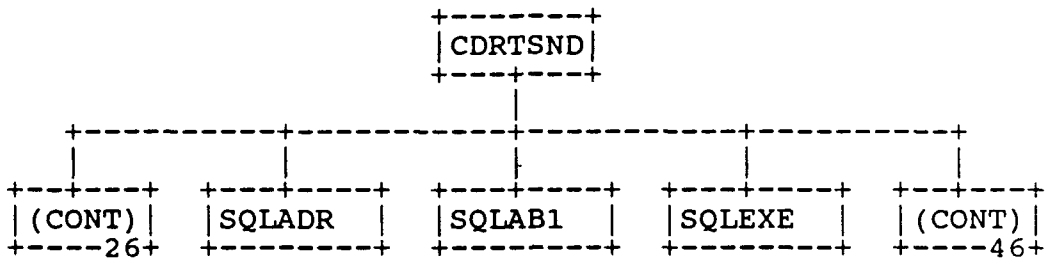
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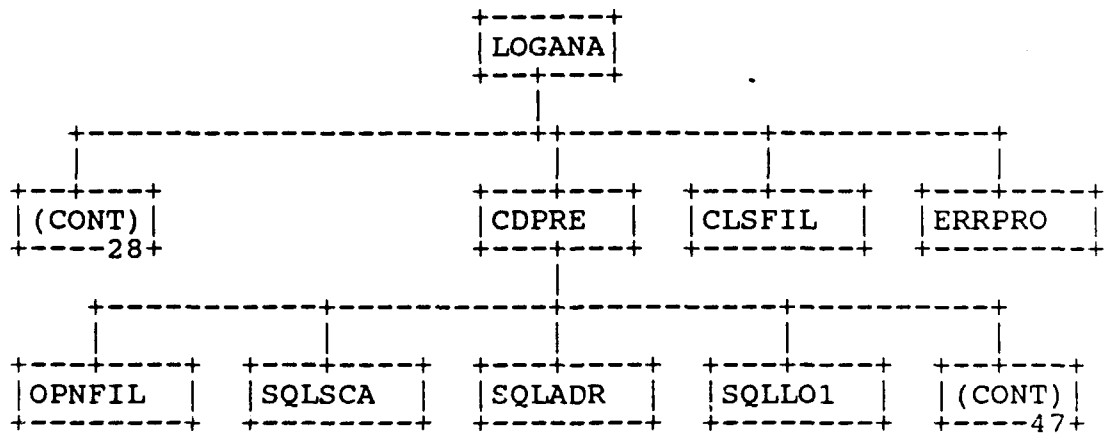
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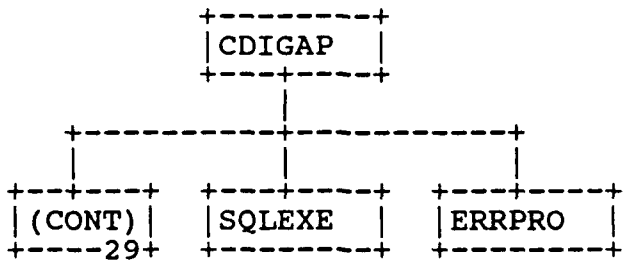
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ERRPRO

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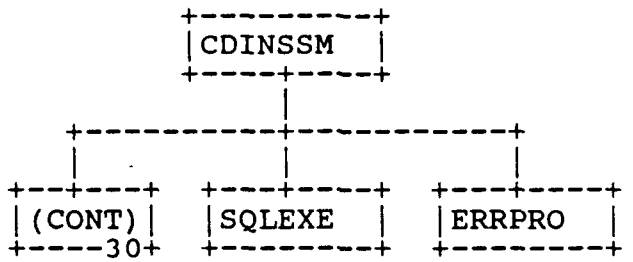
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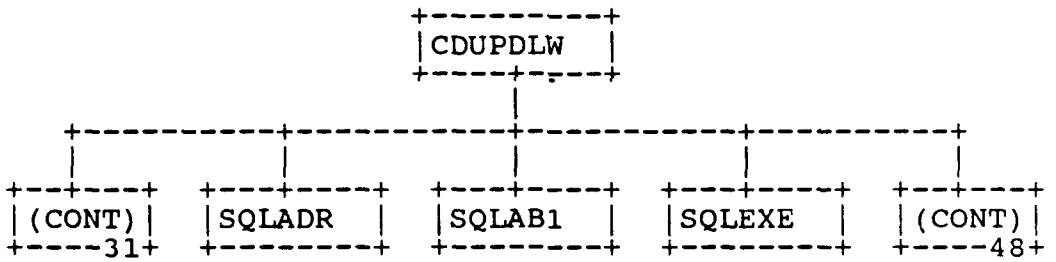
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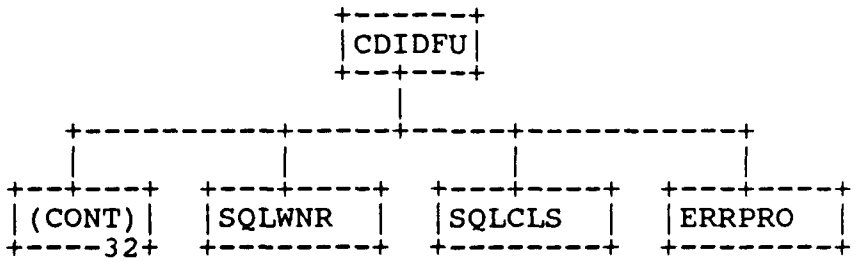
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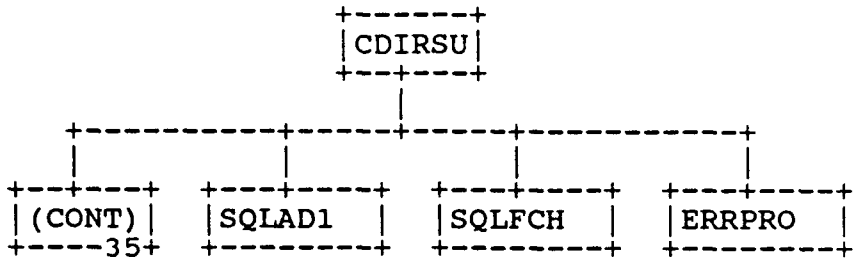
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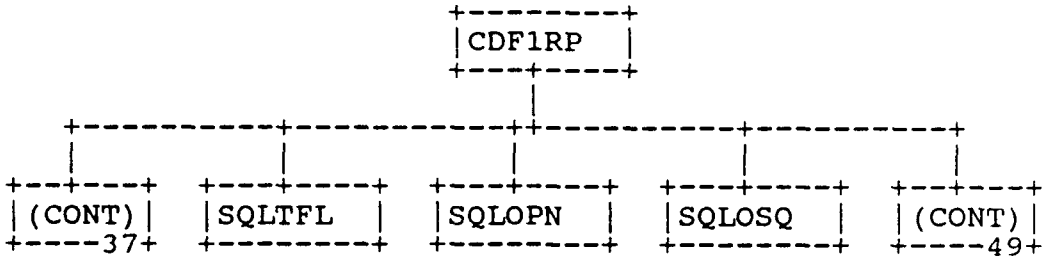
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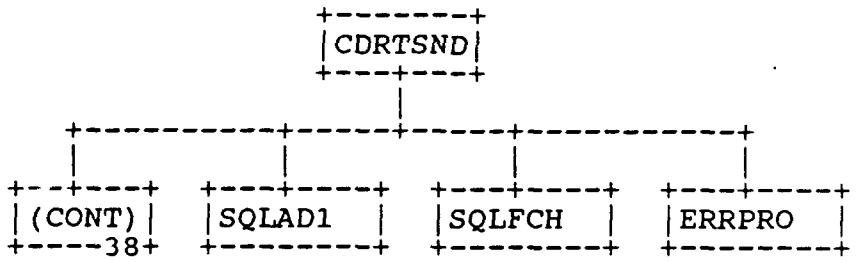
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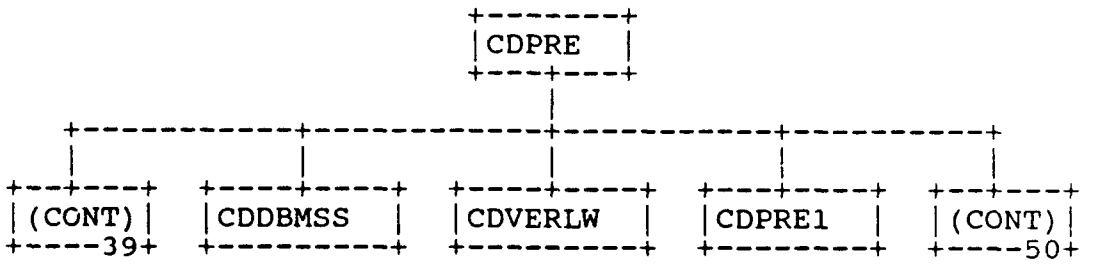
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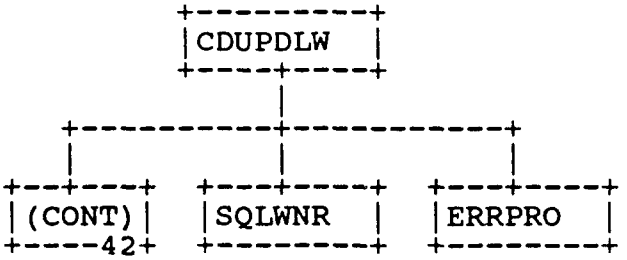
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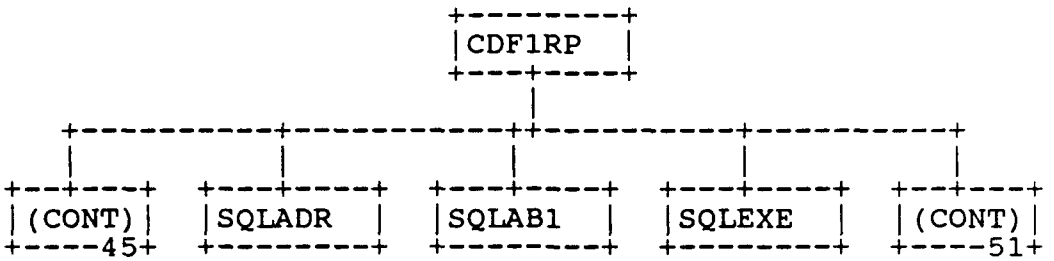
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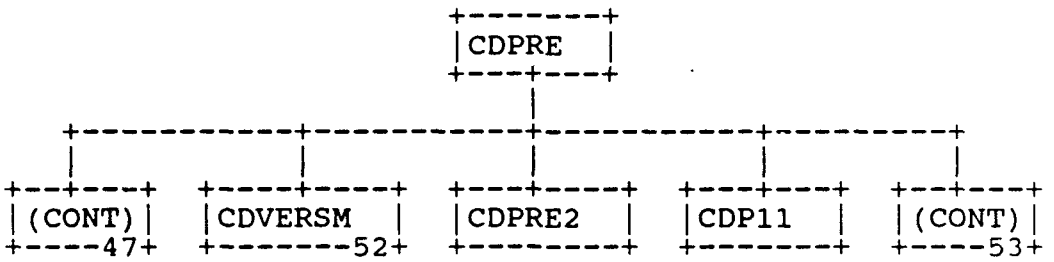
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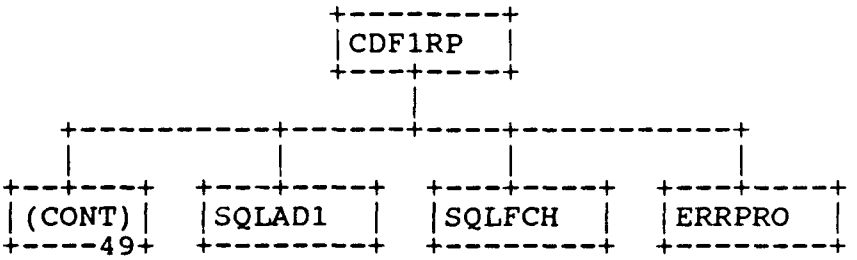
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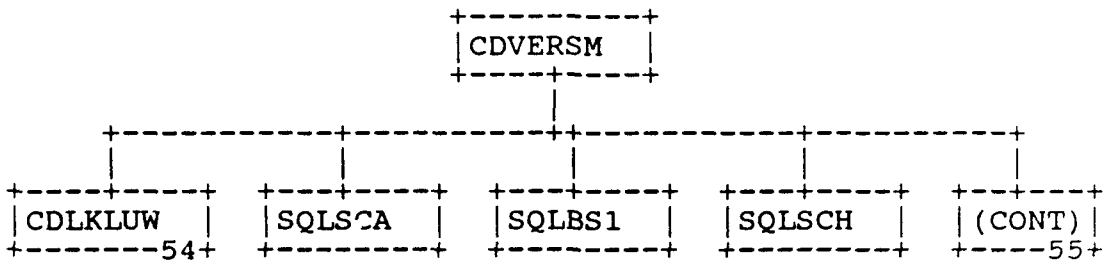
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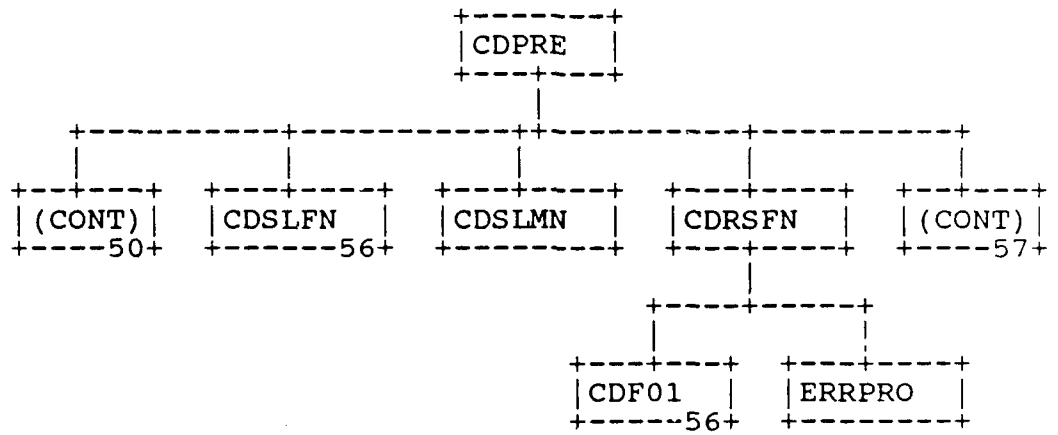
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ERRPRO

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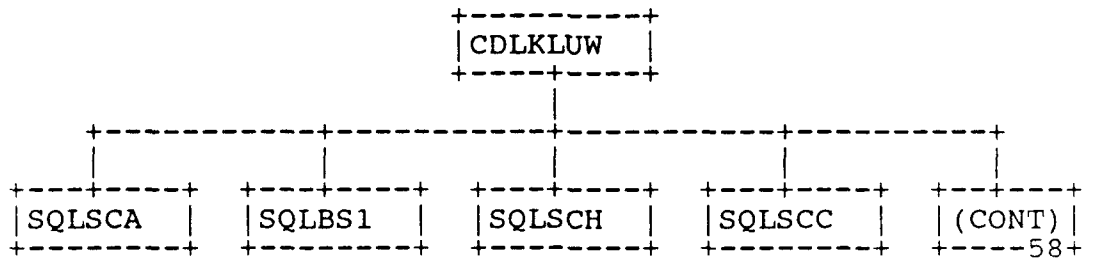
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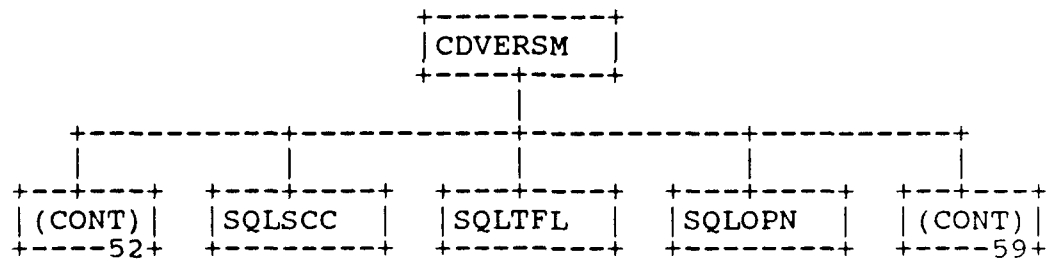
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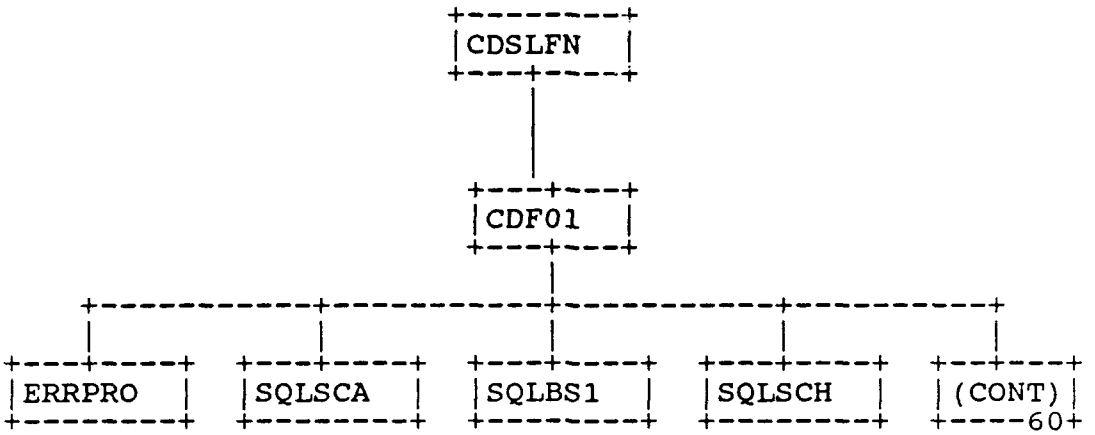
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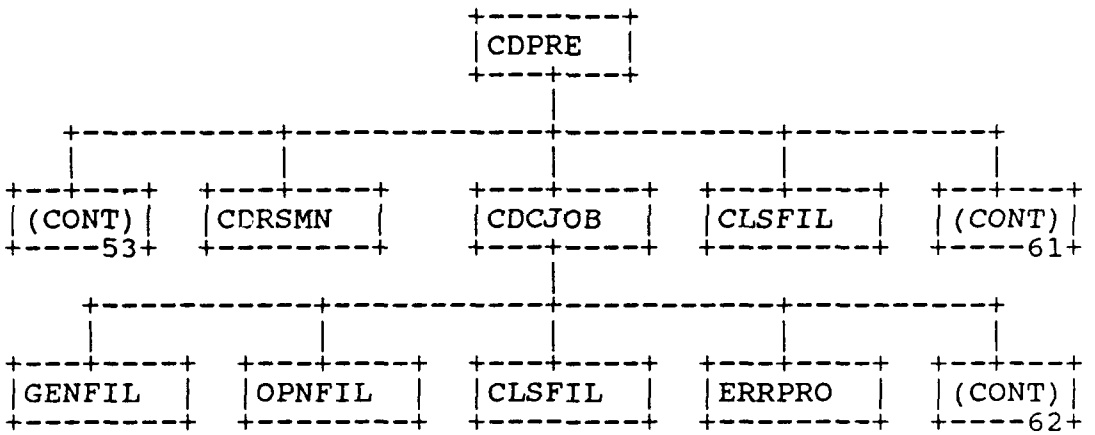
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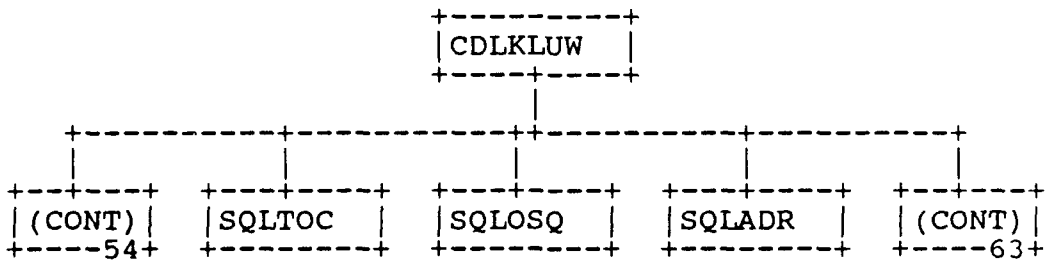
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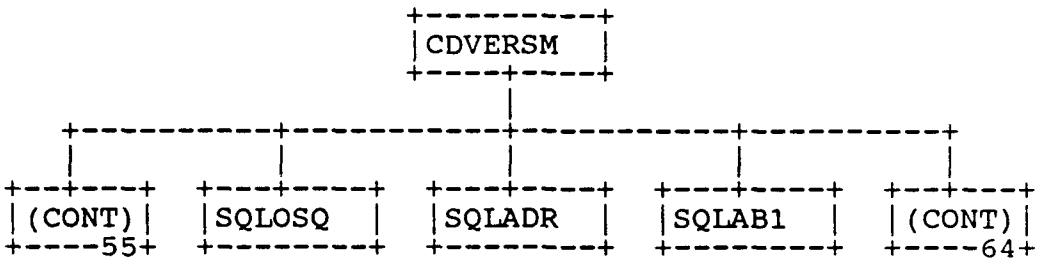
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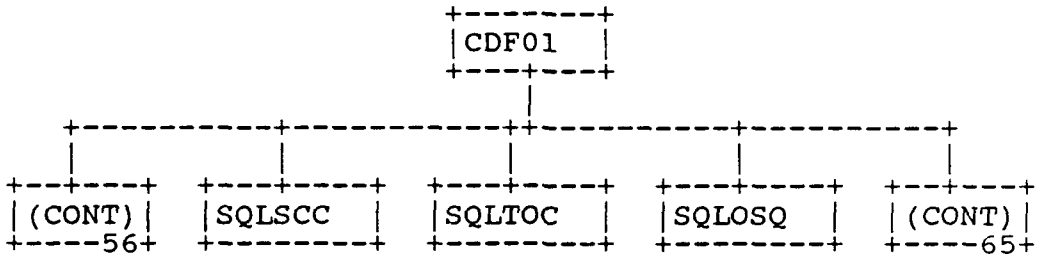
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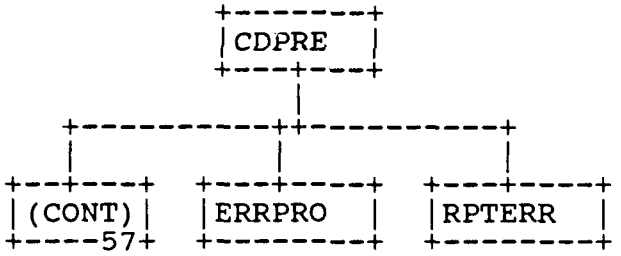
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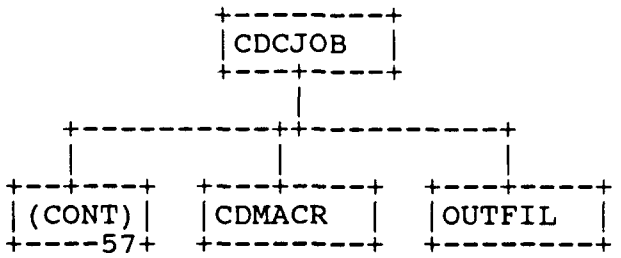
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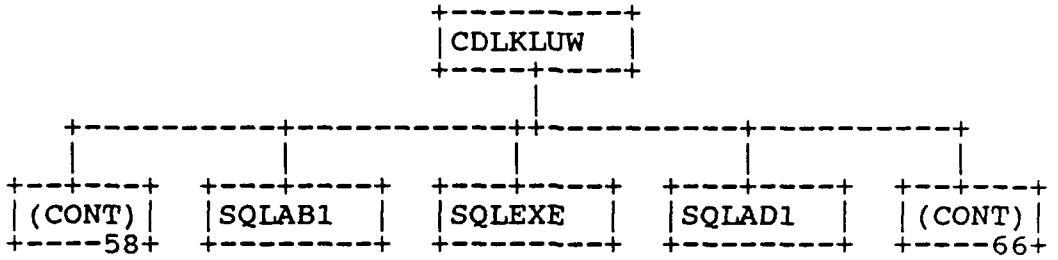
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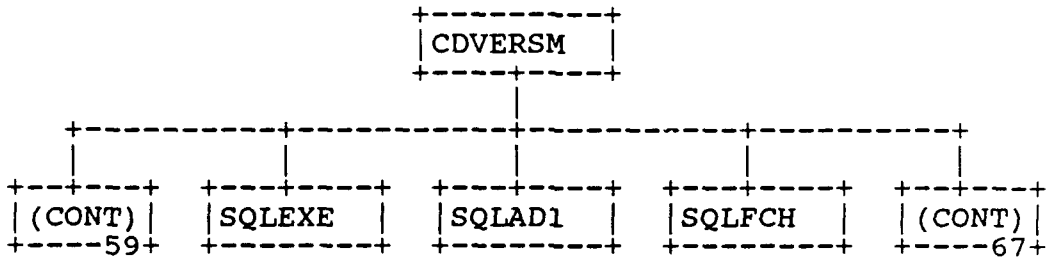
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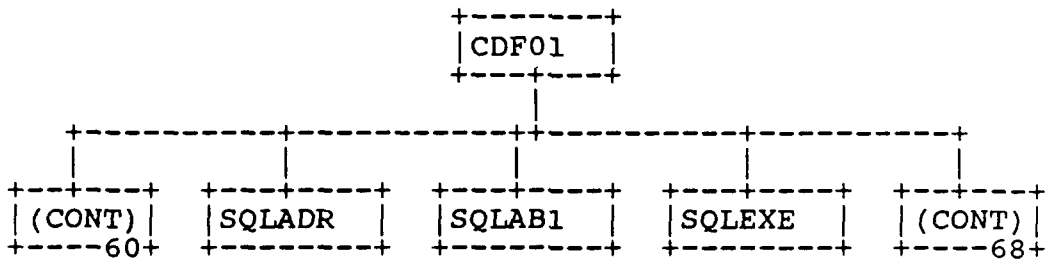
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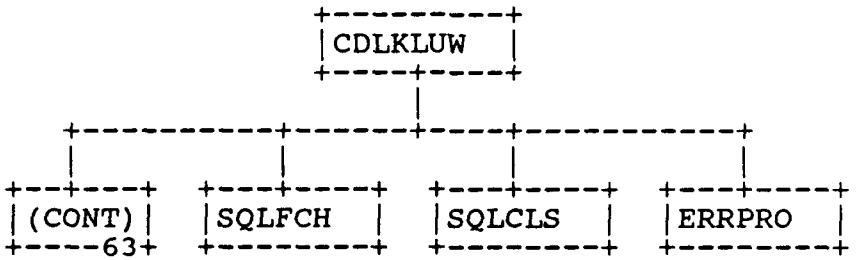
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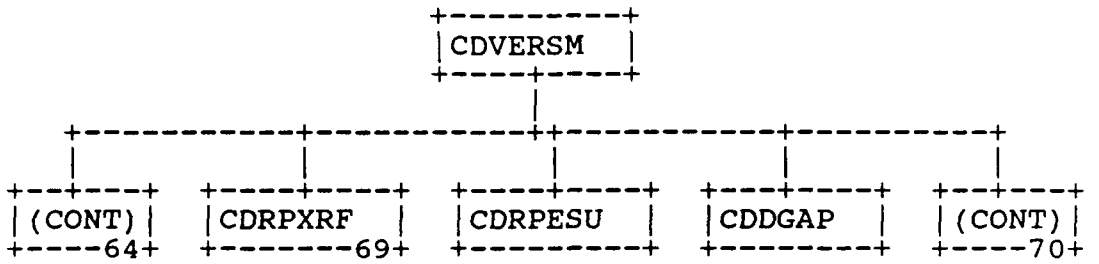
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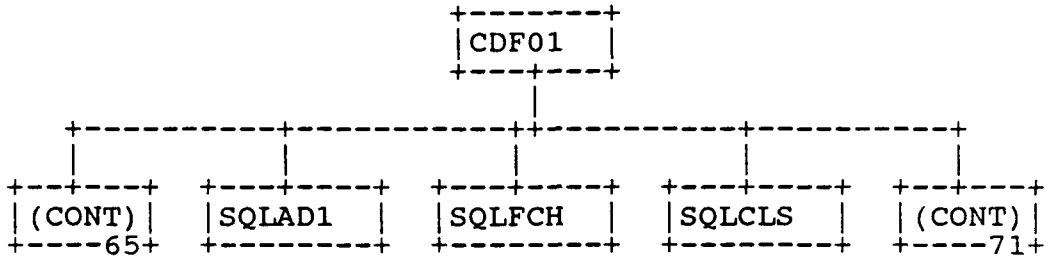
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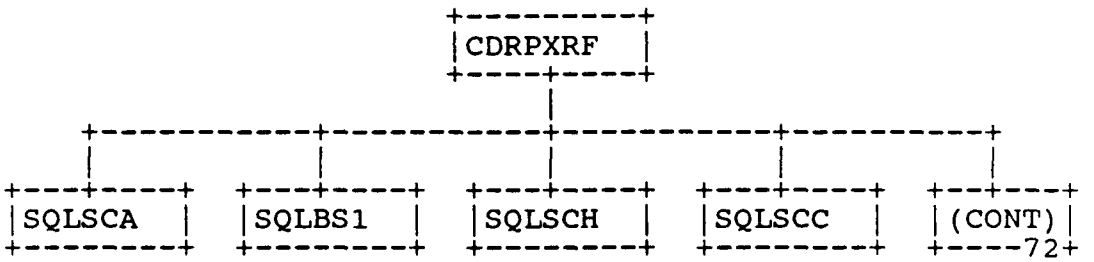
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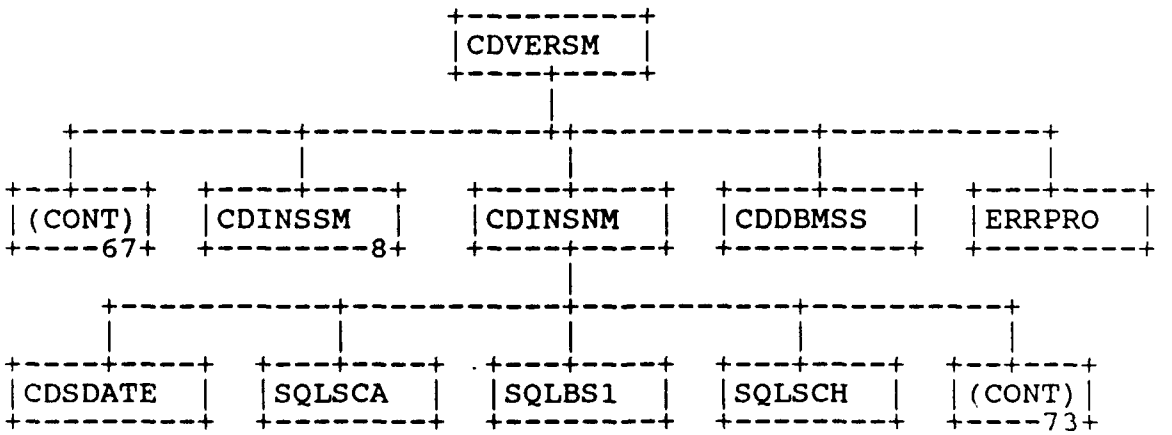
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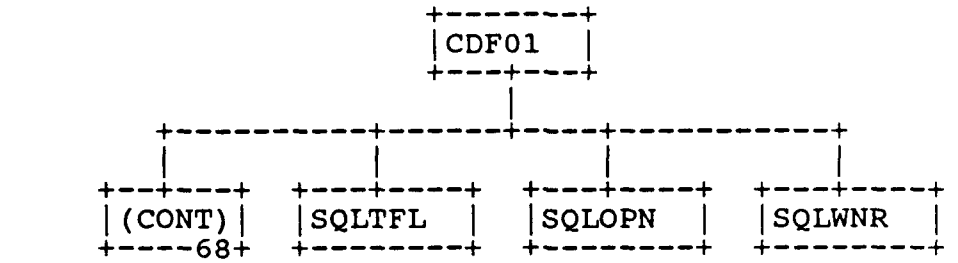
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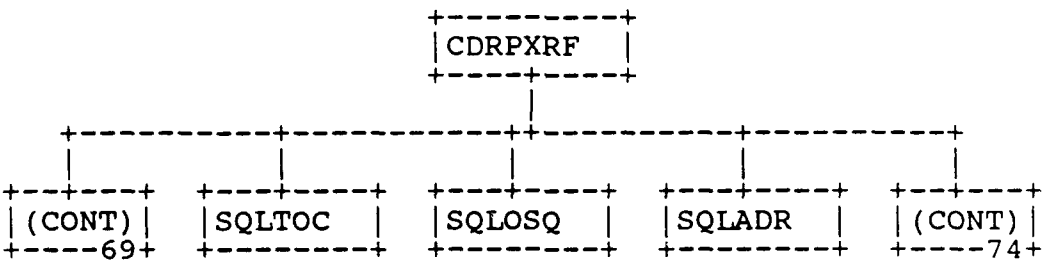
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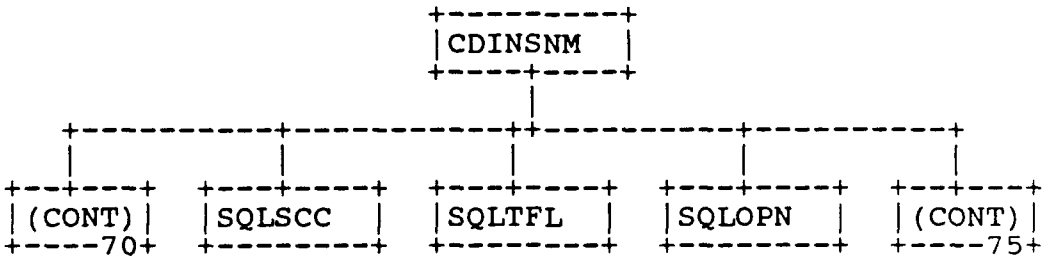
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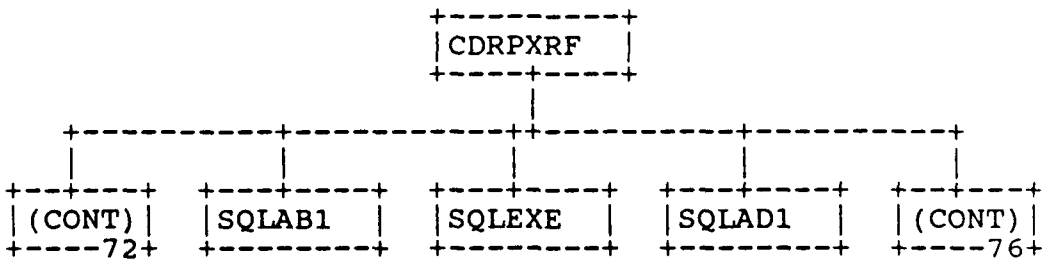
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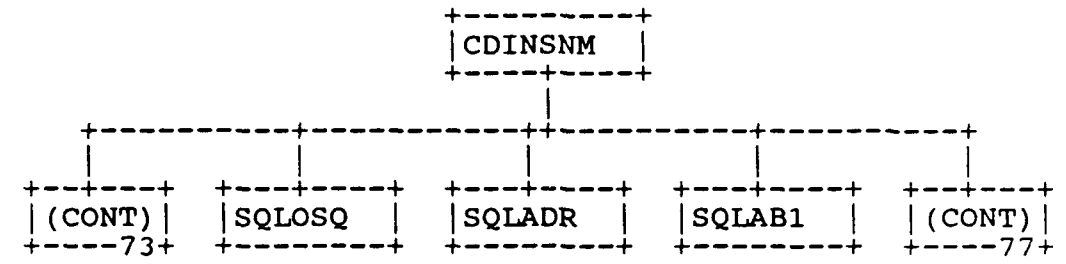
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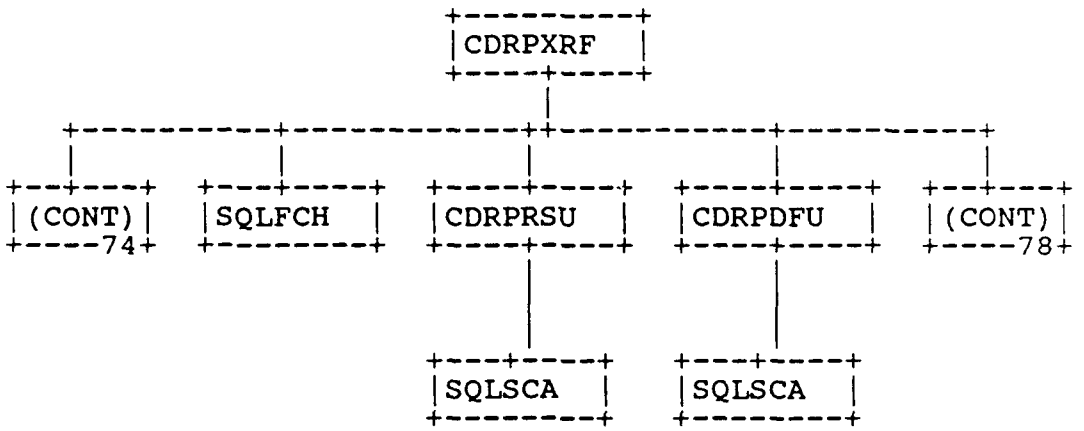
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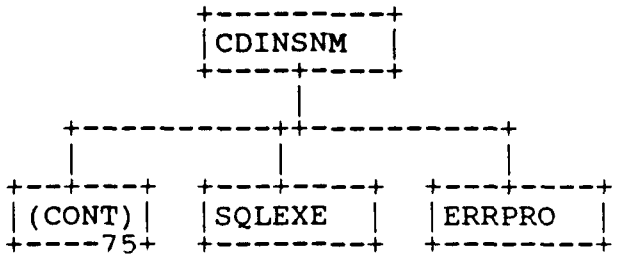
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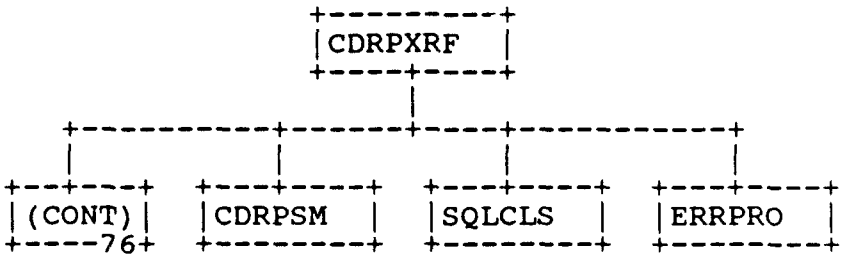
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ERRPRO

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CDECHK.....2
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CDF1RP ....37
CDFLRP
CDFORP ....25
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CDGDF.....3
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CDIDFU.....4
CDIDIU.....5
CDIGAP .....7
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CDINSSM ....8
CDIRSU.....13
CDLKLUW ...54
CDM01
CDMACR
CDP10
CDP11
CDP13.....14
CDP14
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CDPRE .....39
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CDVERSM ...52
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ERRPRO
GENFIL
GENRPD.....27
INPFIL
LOGANA.....28
LOWUPP
NSEND
OPNFIL
OUTFIL
RCMOD.....16
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SQLOSQ
SQLSCA
SQLSCC
SQLSCH
SQLTFL
SQLTOC
SQLWNR

## 3.11 Program Listings Comments

This information is contained in the Module Descriptions in section 3.10.

# SECTION 4

# QUALITY ASSURANCE PROVISIONS

## 4.1 Introduction and Definitions

"Testing" is a systematic process that may be preplanned and explicitly stated. Test techniques and procedures may be defined in advance, and a sequence of test steps may be specified. "Debugging" is the process of isolation and correction of the cause of an error.

"Antibugging" is defined as the philosophy of writing programs in such a way as to make bugs less likely to occur and when they do occur, to make them more noticeable to the programmer and the user. In other words, as much error checking as is practical and possible in each routine should be performed.

## 4.2 Computer Programming Test and Evaluation

The quality assurance provisions for test consists of the normal testing techniques that are accomplished during the construction process. They consist of design and code walk-throughs, unit testing, and integration testing. These tests are performed by the design team. Structured design, design walk-through and the incorporation of "antibugging" facilitate this testing by exposing and addressing problem areas before they become coded "bugs."